

MUNICIPAL JOURNAL AND ENGINEER

A. PRESCOTT FOLWELL, EDITOR

Published every Wednesday

By Swetland Publishing Company
Flatiron Building, Madison Square
New York CityH. M. Swetland, Pres. J. T. Morris, Treas. F. P. Burt, Secy.
G. E. Sly, Advertising Manager
M. C. Robbins, Western Manager, 836 Monadnock Block, Chicago, Ill.

Telephone, 6723 Gramercy, New York

SUBSCRIPTION RATES

United States and possessions, Mexico, Cuba . . \$3.00 per year
All other countries 4.00 per year
Entered as second-class matter, January 3, 1906, at the Post Office
at New York, N. Y., under the Act of Congress of March 3, 1879.Readers are invited to contribute to the MUNICIPAL JOURNAL
AND ENGINEER, either in the form of special articles or of letters
discussing matters of current interest.It is also desired that the facilities furnished by the reference
library in this office should be widely known and freely used by
those interested in municipal affairs. Visitors will be welcomed
and provided with conveniences for search, and inquiries by mail
will be promptly dealt with.

AUGUST 28, 1907.

CONTENTS

Data Concerning Contract Prices.....	235
Industrial Pollution of Public Waters.....	235
Water from Underground Caverns (Illustrated).....	236
Municipal Gas Lighting in the United States.....	
By Ernest S. Bradford.....	237
Testing Road Materials (Illustrated).....	240
Improving an Open Spring.....	241
German Municipal Methods.....	241
Conduit Systems (Illustrated).....	242
Data Concerning Bids Received.....	243
News of the Municipalities.....	244
Legal News—A Summary and Notes of Recent Decisions.....	249
News of the Societies.....	250
Personals.....	251
Patent Claims.....	251
Trade Notes.....	251
The Week's Contract News.....	252
Incorporations.....	260

Data Concerning Contract Prices

ON another page will be found a letter discussing at some length the value, or lack of it, in the reports given by this and other journals concerning bids received for municipal contract work. The writer claims that the information as to prices now given is of no practical value, and is, indeed, misleading, and that this is through no fault of the journals, but that, assuming they had all the data necessary, these would occupy several pages for each contract reported, and their publication consequently be impracticable. It cannot, of course, be denied that there is a great deal in what the author says, and we are also willing to admit that there are practicable improvements possible to the present methods of publishing such information. We cannot admit, however, that it is impracticable to present such price data so as to be at all worth while. This might be true if all bids received were themselves based upon such a careful consideration of all the affecting conditions as is described by our correspondent. But if this is not the case, it would certainly seem to be superfluous to present in great detail conditions affecting a contract which were not taken into account by the actual makers of the bids thereon. That such care-

ful analysis of each piece of work is not made by the majority of contractors must be almost self-evident from an inspection of the bids received on almost any contract. Taking as an illustration, chosen at random, bids recently received for the Baltimore outfall sewers, Section No. 4. Four bids were received, the totals varying from \$177,231 to \$263,945, a difference of about 34 per cent., certain of the items varying much more than this. Prices bid for excavation and refilling varied from \$18 to \$34 per lineal foot; extra material for embankment from 5 cents to \$1.50 a cubic yard; excavation of drainage ditches from 50 cents to \$2 per cubic yard; 8-inch underdrains from 40 cents to \$1.50 per lineal foot; 10-inch underdrains from 50 cents to \$2 per lineal foot, and so on through the list. These variations in the prices on one contract are as great or greater than the differences between prices in seventeen cities in the table referred to in this letter. The contract just cited, moreover, was not a small one, carelessly bid upon by a number of contractors, but of sufficient magnitude to call for careful consideration. If all the data as to the condition of soil, length of haul, and other items were known by the reader of these figures, would he be enabled thereby to arrive at any definite conclusion as to what such work actually will cost?

There seems to us no question, however, that some information concerning contracts reported should be given, especially as to its magnitude, the depth of trench in case of sewers, presence or absence of rock or water, the cost of labor, etc. The simple statement that 8-inch sewer, for instance, was constructed for 60 cents a foot, means very little unless we know the depth of trench, whether the price includes (as is the custom in some cities) Y branches, manholes and other appurtenances, and other important affecting conditions. We accordingly present, from time to time, tables giving all of such data which it seems to us practicable to obtain or to find space for. If this is as useless as the writer maintains, then we are wasting our time and energies in preparing such tables. We will be glad to hear from our readers expressions of their opinion as to how valuable or valueless they believe these data to be.

Industrial Pollution of Public Waters

ALTHOUGH many protests have been made of late against the discharge into the Hudson river or New York harbor of the sewage from the residents in the Passaic and Bronx valleys, there are other sources of pollution of which little is heard. From the scores of miles of roadways in New York City itself street dirt is washed into the sewers and discharged by these along the water front, and the recent adoption of flushing machines for street cleaning is probably responsible for a considerable increase in this amount. There are, besides, many private offenders, among the most serious being the oil refineries on Newtown Creek, at Bergen Point, and elsewhere within and near the city's boundaries. The refuse from these plants renders disgustingly black and foul the waters in the vicinity of the outlets; but even more serious is the fact, which investigations have apparently demonstrated, that the material travels far and causes deposits

throughout the harbor. This matter is objectionable not only because of its own bulk, but because it seems to prevent or retard bacterial reduction of the organic sewage matter present, a reduction which would continuously diminish its volume and improve its character. Moreover, oil is found covering the surface of the harbor waters and greatly detracting from the charm which they should possess. This has been attributed by many to sewage grease, but it appears to have been traced to the oil refineries.

This is but one illustration of the many which can be found throughout the country. Sulphide pollutes Lake Champlain, pickling acid the Connecticut streams, dye and wool scouring waste liquors in the Schuylkill, and sulphur water from coal mines, salt water from abandoned or imperfect wells in the oil regions, and wastes from breweries, gas works, tanneries and a variety of manufactories offend throughout the country. Many of these substance render the water impossible for municipal supplies, and others cause serious interference with filtration by clogging the sand pores or by germicidal effects. Tarry matters are particularly objectionable in interfering with filtration, and the possibility of their being washed from roads treated with dust preventives is worth investigating. These matters should receive the earnest attention of State Health Boards, without favor to any vested interests.

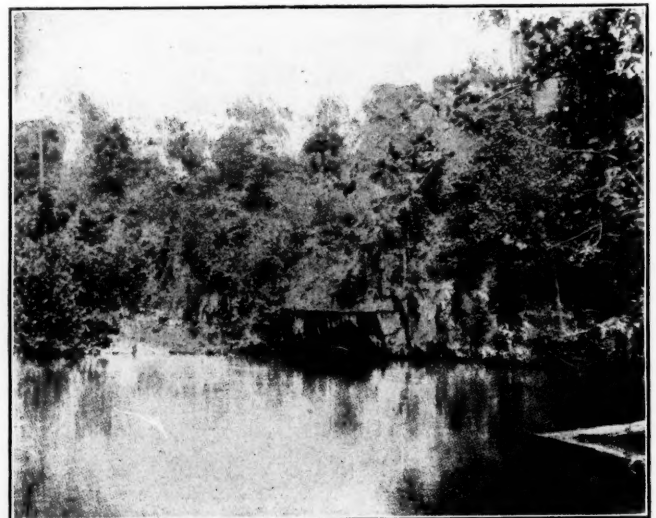
Water from Underground Caverns

SPRING water is usually thought of as being nearly the ideal drinking water, and where its course previous to emerging at the surface has lain through a considerable distance of sandstone, sand or fine earth, which may serve the double purpose of a filter and a retarder of velocity (the benefit of the latter being the long duration of underground flow thereby secured, which duration has considerable influence in the destruction of living pathogenic organisms), this is generally the case. When the springs issue from fissures or caverns, however, there is no particular reason why the water should be much purer than river water which has passed through an uninhabited country for a distance equal to that of its underground flow. These underground rivers are some times tapped by wells, and the same remarks apply to these also. Some very interesting instances of such wells and springs are cited by Mr. Edward M. Sheppard in Water Supply and Irrigation Paper, Number 195, entitled "Underground Waters of Missouri." The fact that the well referred to became dry in times of draught and that at such times strong currents of air were found rushing out of it would apparently indicate that it was in fact a surface stream only, whose underground flow was but incidental and of comparatively very short length.

"There is a blowing well in Camden County, Missouri, near Decaturville, and one of greater interest on the farm of J. B. Murphy, near Raymondville, Texas County. This well, which is on a hill, was drilled in 1899 to a depth of 187 feet. Soft water was struck at the bottom and rose 7 feet in the well. In a dry time, especially in the

winter, the well becomes dry. In drilling it, a cave 3 feet high was struck at a depth of 100 feet. When the well is dry, if there is a long prevailing wind from the north, a current of air rushes from the pipe strong enough to blow the cap from the tubing. This fact illustrates the honeycombed and cavernous nature of the rocks in this region. About 10 miles to the north, in the valley of Ashley Creek, is what Schoolcraft described in the account of his trip through this region in 1818 as 'the valley of caves.' Here in the eroded bluffs may be seen numerous caves which testify to the great amount of underground drainage, and through which probably the prevailing winds are sucked underground and carried for long distances.

"The traveler passing south from the crest of the Ozark plateau, crosses a belt throughout which sink holes prevail, a fact noticed by Schoolcraft, who refers to the locality as 'the prairie of little lakes.' The large amount of water that soaks into the catchment basin of the Ozark dome quickly begins its work of solution by forming underground cavernous waterways, manifested at the surface in numerous places by sink holes, many of which form ponds. The gradual evolution of valleys by the cutting out of strata and the merging of these sink holes into continuous gorges cannot be fully discussed here, but it is a most interesting phase of underground drainage. In some cases a section of the barrier between two sink holes resists erosion and an arch is left which forms a natural bridge. A beautiful illustration of this kind of erosion is found on Sinking Creek, Shannon County, where the large stream runs through a tortuous gorge formed by the undermining and washing out of a chain of sink holes. In one part of its course it meets a barrier of which only the lower portion is removed, and thus is formed the unusual natural feature of a stream running under a mountain and continuing its course through an eroded gorge on the other side. The channel of this stream is 40 feet deep, and one may easily ride in a boat through its course under the mountain. The accompanying illustration shows this underground channel."



SINKING CREEK, ISSUING FROM UNDER NATURAL BRIDGE.

MUNICIPAL GAS LIGHTING IN THE UNITED STATES

Analysis of Present Conditions and Statistics—Relative Growth of Private and Municipal Plants —Most of the Latter Found in the Middle West and South

By ERNEST S. BRADFORD,

Fellow in Political Science, University of Pennsylvania.

THE lighting for the people of the United States is furnished in two general ways: by separate units, as the old-fashioned candle and the oil-lamp, each house having its own means of lighting; or by a connected system, in which, from a producing center, is furnished the illuminant for stores and houses. The electric bulb or the gas flame, supplied from a central plant by wires or pipes, is part of a *system* of lighting; and, with the growth of our American cities, such systems are becoming ever more common.

There are (in 1907) 4,400 electric-light stations, and 1,270 gas plants in this country, of which 1,100 electric and 125 gas plants are owned by city, village, borough or town. In a previous article in *THE MUNICIPAL JOURNAL* figures were given for municipal electric stations; in this it is our purpose to examine municipal gas. To what extent are gas plants owned and operated by municipalities? Is there a decided trend toward such ownership? And in what localities? are the questions to be here answered.

COMPARISON WITH ELECTRIC LIGHT STATIONS

At the outset, a comparison of gas with electric concerns, their respective investments, employees and incomes, will give us a clear idea of the relative strength and importance of the two industries. A glance at a table furnished by the United States Census Office (Special Report on Central Electric Light and Power Stations, 1902, page 14), shows a striking equality in many respects.

GAS PLANTS AND CENTRAL ELECTRIC STATIONS (Table 1)

	Central Electric Stations, 1902	Gas Plants, 1900
Number of plants	3,620	877
Cost of construction and equipment..	\$504,740,000	\$567,000,000*
Cost of supplies, material and fuel...	\$22,900,000	\$20,600,000
Salaried officials and clerks.....	6,996	5,904
Salaries	\$5,663,000	\$5,273,000
Wage-earners—average number.....	23,330	22,459
Wages	\$14,983,000	\$12,436,000
Income yearly	\$85,700,000	\$75,700,000†

*Capital.

†Value of products.

Except for the number of plants, the two columns show a marked similarity. There are no accurate figures for 1907; both electric and gas plants have greatly increased their number, size, employees and income; although electric concerns, furnishing power to such an extent to-day, have outstripped the gas industry, even with gas for cooking added.

In the size of the places where they are located, gas and electric concerns differ, however.

More than half of the 877 gas plants in 1900 were located in cities of from 5,000 to 25,000 population, while three-fourths of the electric lighting plants were in places of 5,000 or less. Small gasoline and acetylene gas plants

have been established in villages and small cities during the past six or seven years, and number about 320, but they are far fewer than are electric plants in places of similar size.

COMPARISON OF GAS PLANTS AND ELECTRIC STATIONS BY SIZE OF TOWNS (Table 2)

Population of towns in which located	Central Electric Stations, 1902	Gas Plants* 1900
Under 5,000	2,714	200
5,000-25,000	675	484
25,000-100,000	128	124
100,000-500,000	73	39
500,000 and over	30	30
Total number of plants.....	3,620	877

*Does not include natural gas plants.

MUNICIPAL GAS

Municipal ownership has never received the support in the case of gas that it has for electric lighting. The gas business developed much earlier, plants being established in Baltimore in 1816, Boston, 1822, New York, 1823, Brooklyn, 1825, and Bristol, R. I., 1825. Long before the movement for city ownership began the business was well established in most of the large cities of the United States. After a period of new companies and competition, came consolidation, and now, in most cities, there is but one concern supplying gas, and that is a company and not a city plant.

It is now fifty years since the first municipal gas plant was established, in 1852, at Richmond, Va., but out of over 900 works supplying coal and water gas there are only 30 which are owned or managed by municipalities; and less than a hundred small municipal plants, out of three hundred such, supply acetylene or gasolene gas to small towns and villages.

Coal gas was supplied in the early days, but water gas, much cheaper to manufacture after Lowe's new process was invented, about 1875, revolutionized the industry, and now more water gas than coal gas is sold by American companies. Practically all of the large and important gas works of the United States supply either coal gas, water gas, or a mixture of the two; these constitute by far the most important part of the gas lighting and cooking industry. It is very well to divide the various gas works into coal and water-gas, acetplene-gas, gasoline-gas and natural-gas plants; but the former are usually meant when we say "gas plants," and should be considered first; while entirely different conditions prevail in the natural gas business from those that exist in the production of manufactured gas.

The growth of the industry as a whole and of municipal gas lighting is shown in Table 3 on the following page, and in Table 4 is given a list of the plants by States.

INCREASE OF GAS PLANTS, 1850-1907 (Table 3)*

	Total Plants	Municipal Plants
1850	30	0
1860	221	2
1870	390	4
1880	No report	7
1890	742	9
1900	877	15
1906	940	30
1907	947**	30**

*U. S. Census Office. Report of the 12th Census, 1900, Vol. 10, page 705.

**Brown's Directory of American Gas Companies, 1907. Besides 947 coal, water and oil-gas plants, there were 130 gasoline gas plants, and 194 acetylene gas plants, furnishing public or commercial gas lighting. See Table 4.

SUMMARY OF GAS PLANTS BY STATES. (TABLE 4)*

	COAL AND WATER GAS**		ACETYLENE		GASOLINE	
	Total	Munic.	Total	Munic.	Total	Munic.
Alabama.....	10	1	2	2	.....	.....
Arizona.....	4	.....	.....	.....	.....	.....
Arkansas.....	5	.....	1	.....	1	.....
California.....	62	2	3	.....	.....	.....
Colorado.....	10	.....	3	.....	.....	.....
Connecticut.....	22	1	6	.....	1	.....
Dist. of Columbia..	2	.....	.....	.....	.....	.....
Delaware.....	5	.....	1	.....	.....	.....
Florida.....	11	.....	5	5	.....	.....
Georgia.....	12	2	3	2	.....	.....
Idaho.....	2	.....	.....	.....	.....	.....
Illinois.....	58	.....	3	1	8	3
Indiana.....	39	.....	5	2	.....	.....
Indian Territory...	2	.....	.....	.....	.....	.....
Iowa.....	40	.....	10	2	52	25
Kansas.....	7	.....	8	.....	.....	.....
Kentucky.....	17	1	.....	.....	.....	.....
Louisiana.....	2	.....	1	1	.....	.....
Maine.....	9	.....	14	.....	.....	.....
Maryland.....	11	.....	4	.....	.....	.....
Massachusetts.....	66	5	12	.....	.....	.....
Michigan.....	52	1	1	.....	1	.....
Minnesota.....	18	4	6	3	18	15
Mississippi.....	8	.....	.....	.....	.....	.....
Missouri.....	24	1	4	.....	.....	.....
Montana.....	3	.....	.....	.....	.....	.....
Nebraska.....	11	.....	23	1	13	6
Nevada.....	2	.....	.....	.....	.....	.....
New Hampshire...	13	.....	3	.....	.....	.....
New Jersey.....	43	.....	1	.....	.....	.....
New Mexico.....	2	.....	.....	.....	.....	.....
New York.....	108	1	26	1	16	.....
North Carolina.....	11	.....	.....	.....	.....	.....
North Dakota.....	3	.....	6	2	.....	.....
Ohio.....	41	2	5	.....	.....	.....
Oklahoma.....	5	.....	2	.....	.....	.....
Oregon.....	4	.....	.....	.....	.....	.....
Pennsylvania.....	91	1	9	.....	.....	.....
Rhode Island.....	6	.....	1	.....	.....	.....
South Carolina.....	4	.....	.....	.....	.....	.....
South Dakota.....	6	2	5	.....	3	2
Tennessee.....	8	.....	.....	.....	.....	.....
Texas.....	16	.....	6	.....	3	.....
Utah.....	2	.....	.....	.....	.....	.....
Vermont.....	10	.....	.....	.....	.....	.....
Virginia.....	11	5	9	1	.....	.....
Washington.....	10	.....	1	.....	.....	.....
West Virginia.....	6	1	.....	.....	.....	.....
Wisconsin.....	32	.....	2	1	14	10
Wyoming.....	1	.....	.....	.....	.....	.....
Totals.....	947	30	194	24	130	61

*Compiled from Brown's Directory of American Gas Companies, 1907.

**Includes a few oil-gas plants.

MUNICIPAL COAL AND WATER GAS PLANTS

The first municipal gas plant was established in 1852, when the city of Richmond bought out a private company. Alexandria, Va., followed in 1853; Henderson,

Ky., in 1867; Bellefontaine, O., in 1873; and by 1890 there were nine plants in the United States owned by municipalities. Since then the number has slowly increased, until in 1900 the Census Office reported 15, with a total capital investment of \$1,734, 592, and a product of 484,952,120 cubic feet of gas annually, valued at \$450,000. In May, 1907, there were 29 municipal plants supplying coal or water gas for lighting purposes, and one plant operated by the United States government, besides two plants in which the city owned stock. The names and the data for each plant are given in Table 5.

In Louisville, Ky., and Danville, Ky., the city owns stock in the gas company, one-fourth in the former instance and one-fifth in the latter.

An examination of the foregoing table reveals only fourteen cities of more than 10,000 population, and only 17 plants whose annual output is more than 10,000,000 cubic feet. Philadelphia has municipal ownership, but private management, the well-known United Gas Improvement Company operating the entire system under a lease.

MUNICIPAL ACETYLENE-GAS PLANTS

Twenty-four municipal plants supply acetylene gas for public or domestic use. Most of these, as well as most of the gasoline-gas plants have been established since 1901, and are located in places of less than 1,000 inhabitants. The list is given by Brown's Directory for 1907 as follows; a few plants are probably omitted:

MUNICIPAL ACETYLENE-GAS PLANTS, 1907 (Table 6)

State	City	Population
Alabama.....	Carrollton	278
	Fayette	452
Florida.....	Brooksville	641
	Dade City	509
	Hawthorn	300
	Lake Helen	203
	Tarpon Springs.....	541
Georgia.....	Ft. Oglethorpe (U. S. Gov't)....	...
	Roylston	479
	Shannon .....	...
Indiana.....	Darlington	727
	New Palestine	444
Iowa.....	Gladbrook	842
	Graettinger	500
	Holstein	870
Minnesota.....	Bird Island	846
	Norwood	500
	St. Michael	305
Nebraska.....	Newawka	300
New York.....	Spencerport	715
North Dakota.....	Crystal	450
	Lisbon	1,046
Virginia.....	Fort Meyer (U. S. Gov't.).....	331
Wisconsin.....	Palmyra	800

Two plants operated by the United States government are included in this list: one at Fort Oglethorpe, Ga., and one at Fort Meyer, Va.

All of the plants, except the one in New York, are found in the South or in the States of the Mississippi Valley.

CITIES HAVING MUNICIPAL GAS PLANTS. (TABLE 5)*

STATE	CITY	Populat'n of District Supplied 1900	Municipal Plant Installed	Miles of Mains	NET PRICE		Annual Output Cubic Feet	C. P.	Per Cent. Sold For Fuel	No. of Gas Stoves In Use
					Light	Fuel				
Alabama.....	Talladega.....	3,000	1901	3	\$2.00	\$1.00	5,000,000	18	35	65
California.....	Gilroy.....	1,800		5	1.50	1.50	4,000,000	20	10	40
".....	Santa Clara†.....	5,000		20	1.50	1.00‡	10,250,000	22	40	60
Connecticut.....	Norwich.....	17,250		26	1.25	1.25	36,000,000	20	40	600
Georgia.....	Cartersville†.....	3,500		9	4.00	2.00	2,700,000		6	25
".....	Dalton.....	4,500		8	1.00	1.00	7,000,000	22	30	60
Kentucky.....	Henderson.....	18,000	1867	17	1.00	1.00	25,500,000	18	50	380
Massachusetts.....	Holyoke.....	50,200	1902	41	1.20	1.20	128,000,000	18.5		
".....	Middleboro.....	4,000	1894	3.5	2.75§	2.20§	1,520,000	26	70	15
".....	Reading.....						18,000,000	18	60	510
".....	Wakefield.....	15,000	1894	17.5	1.40	1.40				
".....	Westfield.....	12,310	1894	13	1.30	1.30	18,150,000	19.4		
Michigan.....	Escanaba†.....	13,000		5	1.35	75‡	2,000,000		5	
Minnesota.....	Adams†.....	850		1	1.00					20
".....	Duluth.....	52,000	1898	56	75	75	112,000,000	18	50	1,200
".....	Renville.....	1,300		8	1.50	1.50	2,500,000		60	60
".....	W. Minneapolis.....	2,700	1905	4.5	1.50	1.50		18		17
Missouri.....	Rich Hill.....	4,000		5	1.50	1.50	3,000,000	20	25	150
New York.....	West Point (U. S. Gov- ernment).....	2,200		5.5	75	75	23,312,000	20	2	20
Ohio.....	Bellefontaine.....	9,000	1873	16	1.25	75	45,000,000	24		
".....	Hamilton.....	25,000	1890	37	80	80	73,000,000	20	45	1,600
Pennsylvania.....	Philadelphia (leased).....	1,293,000	1887¶	1,300	1.00	1.00	8,711,000,000	22		
South Dakota.....	Desmet†.....	1,000		3	2.00	2.00	2,000,000	24	50	
".....	Dell Rapids†.....	1,500	1905	4	1.25‡	1.25‡				30
Virginia.....	Alexandria.....	15,000	1853	16	1.20	1.20	44,000,000	18		600
".....	Charlottesville.....	8,000	1876	18	1.15	1.15	19,000,000	16.6	16	70
".....	Danville.....	18,000	1876	12.5	1.00	1.00	42,000,000	16.5		
".....	Fredericksburg.....	6,000	1891	7	1.25‡	1.25‡	6,420,000	18-20		
".....	Richmond.....	90,000	1852	87	1.00	1.00	388,687,000	25		4,369
West Virginia.....	Wheeling.....	40,000	1870	21	75		116,000,000	16		
Kentucky.....	Danville (1-5 stock).....	5,000			1.12‡	1.12‡	9,500,000	18	30	
".....	Louisville (1-4 stock).....	204,700		209	1.00	75	525,000,000	18	30	9,200

MUNICIPAL GASOLINE-GAS PLANTS

The 61 plants supplying gasoline-gas are owned by the following villages or cities:

State	City	Population, 1900
Illinois.....	Arthur.....	858
	Ashton.....	756
	Shabbona.....	587
Iowa.....	Bancroft.....	839
	Brighton.....	807
	Brooklyn.....	1,188
	Casey.....	
	Charter Oak.....	772
	Clarence.....	675
	Delta.....	691
	Durant.....	560
	Dysart.....	902
	Hedrick.....	1,025
	Manila.....	773
	Marcus.....	718
	Mediapolis.....	725
	Milton.....	840
	Monroe.....	917
	Morning Sun.....	948
	Newell.....	762
	Pleasantville.....	738
	Richland.....	534
	Riverside.....	608
Minnesota.....	Shelby.....	692
	Sioux Center.....	810
	Williamsburg.....	1,100
	Winfield.....	820
Minnesota.....	Amboy.....	432
	Brandon.....	272
	Bricelyn.....	600
	Canby.....	1,100

Minnesota (Continued)

Minnesota (Continued)	Cottonwood	549
	Dodge Center	942
	Hayfield	439
	Hector	850
	Heron Lake	928
	Houston	542
	Lake Benton	890
	Lamberton	1,000
	Madelia	1,272
	Monticello	818
	Mountain Lake	959
Sanborn	500	
Nebraska.....	Hartington	282
	Newman Grove	696
	North Bend	1,010
	Oakland	1,008
	Syracuse	861
South Dakota.....	Elk Point	1,000
	Flandreau	569
Wisconsin.....	Altoona	717*
	Cambria	678
	Clinton	892
	Fox Lake	908
	Hammond	445
	Hilbert	550
	Horicon	1,553
	Juneau	994
	Nekoosa	1,069
	Wautoma	850

*Wisconsin population figures for 1905.

These plants are all located in the Middle West. It is interesting to note, that 61, or practically half of all the gasoline-gas plants in the country—130 in all—are municipal. Recent sentiment and public opinion in small

*Compiled from Brown's Directory of American Gas Companies, 1906.
¶Official ownership began 1841; actual municipal operation, 1887-1897.

†Oil process.

‡Discount for quantity. §Gross price.

cities would seem to favor municipal ownership; another reason for city management in many of the places is that private capital is afraid of not being able to obtain adequate returns on its investment.

NATURAL GAS

In the 246 towns containing natural gas plants in 1906, there were 357 companies and four municipal plants, as follows:

	Population.
Dunkirk, Indiana	3,187
Chanute, Kansas	4,208
Neodesha, Kansas	1,772
Lancaster, Ohio	15,000

The natural gas supply is not constant, however, the supply gradually ceasing in some localities, and new wells developing in others. The price of natural gas is very much less than that of manufactured gas and, as already explained, such different conditions prevail, in general, as not to warrant its treatment in connection with ordinary gas plants.

CONCLUSION

There are comparatively few municipal gas works in the United States, only 30 out of 947 coal and water-gas plants, or 3 per cent., being so owned; while in the smaller places 25 out of 194 acetylene plants—about one-eighth—and 61 out of 130 gasoline-gas plants—nearly one-half—are operated by municipalities..

The same sections that have the most municipal electric lighting stations—the Middle West and the South—are the ones where municipal gas is being introduced, and here in the smaller places where gas plants have never been introduced. There is little perceptible sentiment in favor of municipal ownership and operation in larger cities, the efforts of those interested being largely confined to stricter control of the companies and attempts to secure lower rates for city lamps and domestic burners.

Some references useful to those interested in municipal gas are given below:

- Bemis, E. W. *Municipal Monopolies*. New York, 1899. Contains a chapter on the history and prospects of gas manufacture, pp. 587-630.
- Municipal Ownership of Gas in the United States. American Economic Association. Publication, 1891; vol. 6, pp. 1-151, and appendix.
- Brown's Directory of American Gas Companies. New York, 1907. Gives technical and commercial data for all gas plants in the United States, Canada and Mexico, 1907; includes private and municipal, natural gas, acetylene and gasoline gas plants.
- James, E. J. *Relation of the Municipality to the Gas Supply*. American Economic Association. Publications, vol. 1, pp. 7-76. Excellent general discussion.
- Lyons, B. F. *Private vs. Municipal Ownership*. League of American Municipalities. Bulletin, November and December, 1905; vol. 3, p. 155. Opposes municipal ownership. December number treats of gas plant at Wheeling, W. Va.
- Municipal Year Book. New York, 1902. Compiled by M. N. Baker, associate editor of Engineering News. Contains figures only for cities over 3,000 population.
- Municipal Year Book of the United Kingdom. London, 1907. Gives figures for English gas plants.
- Relation of American Municipalities to the Gas and Electric Light Service. *Annals of the American Academy*, January, 1906, pp. 200-233. A symposium of present conditions in New York, Chicago, St. Louis, Boston, Cleveland, Buffalo, Seattle, Duluth and seven other large American cities.
- United States Census Office. Report of the Twelfth Census. Washington, 1900. Vol. 10, pp. 705-722. Contains history and summaries of manufactured gas business in the United States. For statistics of municipal gas plants, 1900, see table, p. 722.
- United States Census Office. Statistics of cities having a population of 8,000 and 25,000, 1903. Washington, 1906. Bulletin No. 45. See tables 9 and 10, pp. 75-79, for statistics of gas works in various cities.

United States Census Office. Statistics of cities having a population of over 25,000, 1902 and 1903. Washington, 1906. Bulletin No. 20. See tables 9 and 10, pp. 104-107.

United States Labor Bureau. *Municipal Ownership in Great Britain*, by Frederic C. Howe. Washington, 1906. Bulletin No. 62; January, 1906; pp. 1-123. Full discussion of both gas and electric light plants. Favorable to municipal ownership.

United States Labor Bureau. *Water, Gas and Electric Light Plants, 1899*. (Annual report; vol. 14, pp. 375-531.) Contains much useful information and many tables. Reports of 367 gas plants out of 965; not complete.

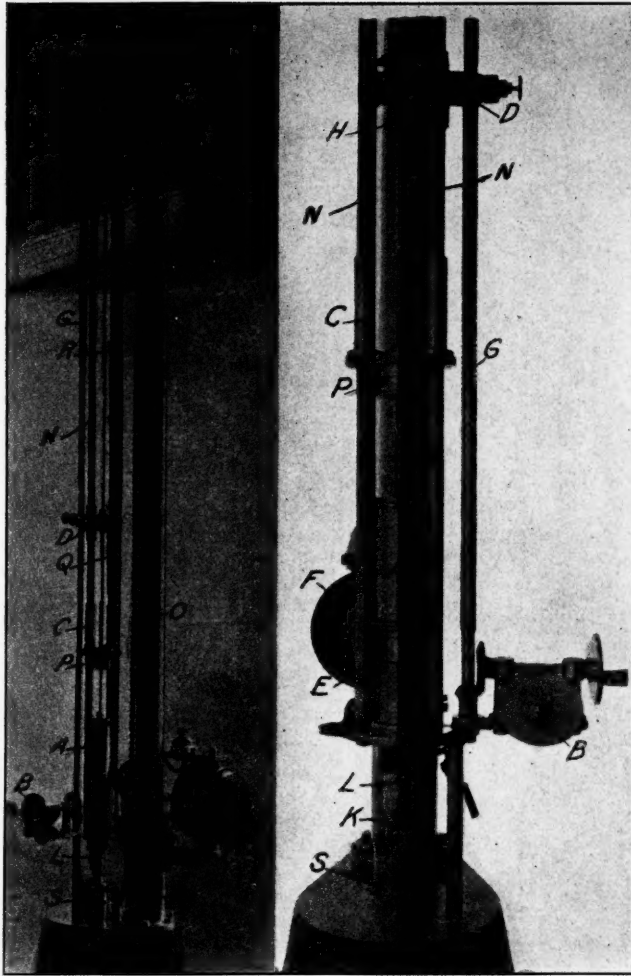
United States State Department. *Gas in Foreign Countries*. Special Consular report, 1891; vol. 6, pp. 89-346.

Report of the Municipal Ownership Commission of the Civic Federation. New York, 1907. Most recent.

TESTING ROAD MATERIALS

As the surface of a road is continually subjected to pounding of traffic, toughness is an important property of rock to be used in road construction. Considerable difficulty has been found in designing a suitable test and machine for measuring the degree of toughness of a rock. Some structureless, brittle materials resist impact by their low modulus of elasticity and high elastic limit; apparent toughness determined by striking such a material by a flat head would be almost wholly due to elasticity. In this case there would be a critical energy of blow below which the specimen under test would not be broken by an indefinite number of blows, but it would be broken by a single blow in excess of this. In testing such materials under impact, it is necessary to apply a number of blows of successively increasing energy and note the blow causing failure. The toughness will vary directly as the square of the elastic limit and inversely as the modulus of elasticity. In a paper before the American Society for Testing Materials Mr. L. W. Page, Director of the Office of Public Roads of the Department of Agriculture, described a machine involving this principle of progressively increasing impact, the result of fourteen years' work on the subject.

Some idea of this machine may be obtained from the illustration. "Instead of the hammer falling directly upon the test piece it strikes an intervening plunger and the energy of the blow is conveyed through this plunger to the test piece. As comparative values are sought rather than physical constants, the end of the plunger bearing on the test piece is spherical in shape, thus rendering the energy of the blow splitting in its effect." Of two machines now being used one has a 2 kg. hammer and a 50 kg. anvil, and is used for making routine tests of road material. A larger machine with a 10 kg. hammer and a 500 kg. anvil is used for testing paving blocks. In the small machine, tests are made on 25 x 25 mm. rock cylinders, which are cut with a core drill. The blow as delivered through a spherical end plunger approximates as nearly as practicable the blows of traffic, and also does not require great exactness in getting the two bearing surfaces of the test piece parallel, as the entire load comes upon one point of the upper surface. The test piece is adjusted so that the center of its upper surface is tangent to the spherical end of the plunger, which is pressed firmly upon it by a spring. The test piece is held on to the anvil by a device which prevents rebounding of the piece and



keeps it centered. The hammer is raised by a sprocket chain and released automatically by means of an electromagnet. The hammer falls 1 cm. at the first blow, and the distance is increased 1 cm. each successive blow until failure occurs. The number of blows required to destroy the sample is used as a measure of its toughness. Variation in the results on the same sample is very low, seldom exceeding one blow.

In the illustration A is a 2 kg. hammer guided by two vertical rods N. The upper end of the hammer has a small cone in it, which fits snugly into a concentric electromagnet P, the latter being attached to the lower side of a crosshead C, which slides freely on the guide rods N. This crosshead is provided with a slot on its rear side through which the sprocket chain O passes. This sprocket chain is supported on two sprocket wheels which are attached to castings at the top I and near the base K, which also support the guide rods N and other attachments. The lower sprocket wheel is directly connected by worm gear to the electric motor F, which produces the motion in the sprocket chain; which chain is provided with two small lugs which engage a spring bolt attachment, which projects inwardly on either side of the slot on the crosshead C. This raises the crosshead until tripped by a rod O, projecting downward from an upper crosshead C, when the crosshead C, which holds the electromagnet, falls until it comes in contact with the hammer A. The circuit running the motor provides current to the electromagnet

P through two small conducting rods parallel to the guide rods. At the top of the conductor rods is a make-and-break attachment H on the crosshead D. When the crosshead C is raised by the sprocket chain lugs the hammer is lifted until the crosshead C comes in contact with the make-and-break attachment, thus releasing the hammer, which falls, striking the plunger L. This plunger is made of armor-piercing steel, with its maximum temper at the lower end, which is spherical in shape. The test piece rests on the hard steel anvil S and the plunger rests on its upper surface. The upper crosshead D is raised by the long revolving screw G, which is geared at its lower end to a dial B, on which the height of the hammer drop may be read direct; which drop may be adjusted to within one millimeter. That the crosshead C, which holds the electromagnet, may not strike too hard a blow on the hammer when falling, a few drops of cylinder oil are placed on the lower end of the guide rods, which retards the velocity.

Among tests made with this machine, the highest result was obtained from a sample of diabase from Pennsylvania, one sample of which broke at a 54 cm. drop, and another three months later tested by another operator broke at 58 cm. drop. The next highest result was from a fine-grained sandstone from Virginia, one sample of which broke at 49 cm. and the other at 50 cm. This machine has also been used for grading asphalt surface mixtures, and some interesting penetration tests have been made on wood paving blocks.

Improving an Open Spring

A SPRING which furnishes part of the water supply of Allentown, Pa., was found to have a heavy growth of moss on the bottom of the basin, the collection of which was assisted by the large stones which were there. About 150 loads of these stones were removed, the bottom leveled off, and 408 loads of gravel were spread over it. This proved successful in preventing the growth of moss and much improved the appearance of the basin.

German Municipal Methods

AN English official, one of a party which recently visited Germany to study their municipal institutions, reports in the *Local Government Journal*:

With regard to the acquirement of land, street improvements, and so on, municipalities appear to have absolute power to buy land surrounding their cities. As a matter of fact, Frankfurt during the past ten years has purchased 16,000 acres of land, at a cost of five millions of money. Instead of allowing land-owners to become rich through the growth of a town, when signs of growth are visible the municipality steps in and buys the surrounding land, so that the town gets the benefit instead of the individual. In that way the city authorities have absolute control over the laying out of new estates, and they are able to provide people's parks and open spaces, and make wide thoroughfares, varying from 50 to 150 feet in width. Everything seems to be carried out which will promote the health and pleasure of the people.

While it is possible that this is a step further along the lines of "municipal trading" and paternalism than would be acceptable in this country, there are certainly, as we have previously stated, many arguments in favor of

this or similar methods by which the city as a whole might profit by its own growth and public improvements rather than favored individuals, the value of whose property has been increased by such improvements without any effort or merit on their part.

CONDUIT SYSTEMS

IN a paper read by Mr. W. F. Roberts at a recent meeting of the Engineering Association of the South, considerable information is given concerning the materials and methods employed in laying underground conduits for electric wires. The kinds of conduits in use the author divided into three classes. First, conduits of vegetable materials; second, conduits of metal material; and third, conduits of silicious material. In the first class are the Valentine creosoted box; the Wyckoff creosoted tube or pump log; and the paper or fiber conduit. In the second class are the Johnston sectional cast iron conduits; wrought iron pipe laid in hydraulic cement; wrought iron pipe laid in asphalt cement; cement lined wrought iron pipe; and steel or wrought iron laid in earth. In the third class are the Dorsett conduit, a combination of coal tar, pitch and gravel (one of the oldest, used extensively in Chicago); the Lake conduit, terra-cotta sectional (principally laid in Washington, D. C.); cement and stone conduit; vitrified clay conduit, both multiple and single.

Those most commonly used at the present time are single or multiple clay, fiber or creosoted wood, all of which the author considers good and the choice between them to be largely governed by considerations of cost. However, in localities where much water has to be contended with, creosoted wood ducts are most practical; while in streets crowded with underground pipes and which are likely to be frequently disturbed, the single clay tile should be laid. The cheapest form is multiple tile laid similar to drain pipe without special foundation. Bare iron and steel pipes are subject to electrolysis. In Nashville single clay tile is laid in a matrix of cement upon a foundation of at least 3 inches of concrete and covered on the sides and top with the same thickness of concrete. This the author considers the highest type of conduit. Its flexibility in winding around and over pipes in congested districts makes it the most desirable system, generally speaking. An additional precaution against damage by picks and shovels is furnished by laying a creosoted plank on top of the completed conduit, but he doubts the value of this if the concrete is of good quality. In Evansville, Ind., multiple

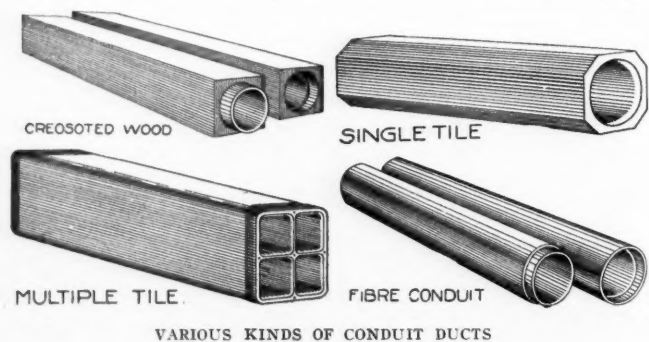
tile was used. The joints of this tile are made rigid by the use of dowel pins. After the ends of the tile have been fitted together a narrow strip of burlap or muslin is wrapped around the joints and covered with cement. This class of duct is sometimes laid without concrete, but preferably is given an entire concrete encasement. A method which has been proposed is to place concrete over the top and partly down the sides only, giving a cross sectional like an inverted letter U; this being supposed to act as a beam to prevent settling.

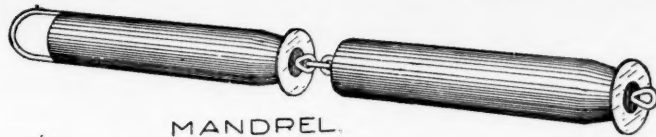
Fiber conduit is laid in several different ways. One method employed in Nashville is to set forms in the excavation, place the bottom and side concrete in position before the fiber is placed, afterward filling the entire space between the side walls and around and between the fiber ducts with cement grout, the top being then covered with concrete. In placing the fiber ducts, they are separated both vertically and horizontally by thin strips of wood which permit the cement grout to flow between them. A more common method is to place the ducts from one-half to three-quarters of an inch apart, in courses, and fill between them with concrete made of thin crushed stone, a coarse concrete being used for the outside encasement; the whole conduit being built up in layers. In either case the best results are obtained by dipping the spigot end of the fiber in hot jointing compound before coupling.

Creosoted wood duct is generally laid without any special foundation, and is usually covered before refilling with a creosoted plank. The spigot ends should fit tight, but not to such an extent as to split when driven home. This class of duct is specially recommended where there is fear of trouble from future blasting or where the soil is so wet as to make concrete construction difficult.

Manholes, handholes and surface boxes are made in various forms; although in telephone work they are standardized both as to shape and size. Some engineers prefer rectangular holes, others round ones. The author prefers oval and acorn shaped holes as best meeting the requirements and least expensive. Handholes or "surface boxes" are usually made very small. The depth or head room of an ideal manhole is 6 feet; although conditions such as drainage often necessitate less. While this head room may seem unnecessary, since most of the work in manholes, such as splicing and testing cables, is done in sitting posture, on the other hand rodding or pulling in cables is done best standing. The materials for manholes and handholes may be brick walls and roofs, concrete walls and roofs, or brick walls and concrete roofs. In cities where water, gas and other pipes are numerous, brick walls are generally preferable, since they make the form more readily adaptable to conditions, can be built around the pipes, etc. Brick, when used for roofs, is usually supported by I beams. The duct may end flush with the inside of the manhole walls, but in many cases is recessed in the walls, the edge of the recess being round, or round-nosed brick being used, to prevent tearing of the cables.

In jointing tile conduits cement frequently works





MANDREL.

through to the inside. To remove this the mandrel is used. This consists of two round pieces of wood, each 2 feet long, their diameter being $\frac{1}{2}$ inch smaller than the conduit. These blocks are coupled together, a handle being fastened to one end of the front block for drawing it forward and rubber washers being placed on the back ends. The mandrel is drawn through the tile for removing the cement; and after the conduit is finished it is tested by drawing through it a hard wood mandrel fitting the tile reasonably close. Underground wires are placed in lead covered cables containing from 200 to 600 pairs of conductors. The rope used to draw the cable into the conduit is threaded through by means of jointed rods similar to those used for cleaning sewers, which are pushed from one manhole to the next. The reel containing the cable is placed over one manhole, and a capstan or windlass with the necessary pulleys and braces at the next manhole. Electric motors, gasoline engines or horses may be used for drawing the cables through. Each section of cable is tested and then connected to the one previously laid in the adjacent section.

Data Concerning Bids Received

E. CAMBRIDGE, MASS., July 30, 1907.

Editor MUNICIPAL JOURNAL AND ENGINEER,
Flatiron Building, New York, N. Y.

DEAR SIR:—Ever since receipt of your issue of May 8, 1907, I have had it on my desk intending to write on the subject of your editorial, "Data Concerning Bids Received." Reliable and complete data are of very great value to engineers as well as contractors, but incomplete data, in so far as it leads the engineer to compare with prices he receives as to estimates for similar work in other cities, or leads the contractor to bid according to such reports, are worse than useless. At best the data which an engineering journal can give in reporting bids for different classes of work throughout the country is very meagre and consequently unreliable, and is liable to lead astray. For such information to be reliable and valuable all the facts must be given. This should include:

- a. Complete canvass of bids.
- b. Complete plans and specifications.
- c. Complete information as to character and location of work, length of haul, costs of labor, material, etc. To give all this covering one letting would take a large portion of the entire space of a technical magazine.

It too often, and in the past very often, happens that contractors bidding on a piece of work ascertain the prices bid by themselves or others on the last contract for similar work in the same city or another city, without ascertaining and figuring on the actual conditions and real lack of similarity. Likewise the engineer is liable to make his estimate or consider the variableness of bids on incomplete, and, therefore, unreliable data. Hence, the well-known fact that frequently, if not generally, in connection with bids for public work there are bids "wide of the mark," either much too high or too low, and often the engineer's estimates are either too high or too low for the particular work to be contracted for.

Take for instance brick pavement construction. The engineering paper may report that in city "A" contractor "X" received a contract for paving "F" street with brick pavement at \$... per sq. yd. Curb, at ... cents per linear foot. Excavation, ... cents per cu. yd. Concrete, \$... per cu. yd. This absolutely gives no reliable information—not reliable because not complete. For instance, the excavation may be sand and the location such that it can be excavated and placed back of the curb by either drag or wheel scraper, or it may be rock, hard pan, quick sand or macadam and require a 5-mile haul to the nearest available "dump." The excavation may be six inches or six feet in depth, a difference which would make in actual cost of excavation a variation per cubic yard of from 50 to 100 per cent.

Manual labor may be \$1 for ten hours, or \$2.50 for eight hours

per day, and team labor \$3 or \$6 per day. Variations within the United States are fully that much.

The foundation may be of sand or of concrete, and if concrete may be made of natural cement costing 50 cents, or Portland cement costing \$2 per barrel; or of gravel or slag at 30 cents per cu. yd.; or crushed stone at \$2.50 per cu. yd. The cushion may be of sand or mortar. The brick may be good, bad or indifferent, and the work may be within one mile or 500 miles of the kilns where they are made and require a 5-mile haul by wagon from the nearest railroad. The contract may be a large or a small one, making a wide difference in cost. The filler may be of sand, grout or bitumen, and the consequent variation in cost 400 per cent to 1,000 per cent on this item. The work may be 100 ft. or five miles from the railroad station.

The square yard price of pavement may include foundation or may not. The curb may be 4x16 or 6x24; may be roughly or smoothly dressed; of granite, hard sandstone or soft sandstone; limestone or any other stone, and the price per square yard may or may not include concrete foundations under the curb. The concrete may be a large mass under the center pavement or only a small amount of "extra" concrete for reinforcing trenches, etc., which would quadruple the labor cost per cubic yard. There are hundreds of other items of probable variation of more or less importance in connection with a brick paving contract. The same conditions run through all branches of contracting and engineering work. A price for "rock excavation" may be too high under some conditions and four times that price too low under other conditions.

In your issue of July 10, 1907, page 56, is given a table, "General Cost in Dollars per Square Yard of Paving in 17 Cities of the United States." This table was evidently prepared with very great care and after considerable study, and yet it is unsatisfactory and incomplete. Taking the one item of brick pavement, after referring to the several notation marks and foot notes, we find the following:

"Eleven cities reported variation in price per sq. yd. from \$1.40 to \$2.47."

Foundation—3 cities report "concrete or other base not specified"; 3 cities report "foundations not reported"; 4 cities report "six-inch cement concrete base"; 1 city reports "five-inch cement base." Not one of these report whether concrete is made of: a. Natural or Portland cement; b. slag, gravel or crushed stone.

Guaranty—6 cities report "no guaranty reported"; 2 cities report "guaranty 5 years"; 1 city reports "guaranty 5 to 10 years"; 1 city reports "guaranty 9 years"; 1 city reports "guaranty 10 years."

Excavation—Absolutely no information is given.

Now, I do not wish to be understood as complaining at the meagreness of this information. On the contrary, I believe it contains as full information as it is practicable for a technical journal to collect and report. My point is, that such information along the line of costs as can be practically given in a technical journal is necessarily so meagre as to be of no practical value, if not misleading.

Your correspondent quoted in your editorial above referred to of May 8, 1907, tersely says: "The other technical journals occupy pages of their papers giving the results of bids all over the country, and to those not familiar with the special work they are not worth reading, because the general features of the work are not set forth, and so no comparison can be made with work of a like character in other sections." I absolutely agree with your correspondent in that statement, but I disagree with him in his conclusion that it is at all practicable for a technical journal to collect and report "properly prepared" (*i. e.*, complete and, therefore, reliable) information. My idea is that as it is not practicable for a technical journal to report all information, it is best to have its information concise and complete as far as it goes. I would suggest the following form of procedure:

1. Endeavor to report every contract for which bids are received on all branches of contract work which the journal covers.
2. Have each item very short, covering: a. name of city or other party contracting for the work; b. class of work—if a pavement, for instance, state the kind of pavement; c. size of contract by unit of measure or amount in dollars; d. name of at least the lowest and preferably of all bidders; e. name of the city or other engineer in charge.

With this concise information contractors and engineers who are sufficiently interested in any particular item may secure complete information. More information than this is unreliable because incomplete, unless the journal is prepared to have a competent engineer or contractor examine and report full conditions and publish from five to twenty-five pages of matter regarding each contract. Of course, this is both impracticable and undesirable, because an insufficient number of readers would be interested in the data regarding any particular contract.

I believe that most of your readers would prefer a large number of promptly reported and tersely stated items to a lot of incomplete data.

Very respectfully yours,

G. HOWARD PERKINS.

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Departments—Government and Finance

Roads and Pavements

CHESTER, PA.—City Solicitor Gardner recommends that Councils set aside a certain amount of money, to be known as the sidewalk fund, from which contractors will be paid for constructing sidewalks. The city has experienced considerable difficulty in getting work of this kind completed, owing to the fact that the contractors heretofore have been compelled to look to the property owners for their pay, which tied up their money for considerable time. Mr. Gardner recommends that a general ordinance be drawn authorizing the city to pay the contractors for the work upon its completion, the city to protect itself by filing liens against the properties in front of which walks are constructed.

DETROIT, MICH.—The Detroit United Railway Company considers it unfair that the city should insist that it sprinkle its tracks more frequently, as Mr. Kerwin, Superintendent of Tracks, believes that too frequent sprinkling is injurious to the roadbed. He says that the water runs down the side of the pavement, ruins the concrete by washing away the clay support beneath it, and causes it to crack and sink. The company owns nine wagons, with a total capacity of 378,756 gallons of water a day, the mileage covered by the sprinklers being 52.85 miles of single track and 52.54 miles of double track. Mr. Kerwin estimated that the continual sprinkling ruins more than two miles of double tracks, which cost the company about \$100,000 to repair.

HARRISBURG, PA.—Up to the present time the Highway Department has accepted only an eighth of the 155,000 square yards of asphalt paving which the Warner-Quinlan Company is under contract to furnish. When this company completes its work on the Hill about one-fourth of the contracts of the Warner-Quinlan Company will have been finished. The Barber Company has completed about one-fourth of its 92,000 square yards and is working on several other streets which will run up its total beyond that of the Warner-Quinlan Company. The Barber Company is making the better progress, according to the reports that have been filed at the Highway Department.

INDIANAPOLIS, IND.—On the advice of City Engineer Blaine H. Miller, the Board of Public Works will probably reject all bids for paving North Meridian street with creosoted wooden blocks. The specifications under which tenders were submitted provided that the oil used in creosoting the paving blocks should show a residue of not less than 65 per cent. of non-volatile matter after being heated up to 600 degrees Fahrenheit. According to the tests made by the chemist in the City Engineer's office, none of the samples of oil showed more than 45 per cent. of residuum. The investigation was undertaken in consequence of the protest of Clarence Kenyon, President of the Hoosier Construction Company, against the acceptance of the bid of the Union Asphalt Construction Company, the lowest bidder and a new competitor in the field.

NEW BEDFORD, MASS.—Mayor Charles Ashley, Superintendent of Streets Lawton, City Messenger Remington and Councilman Barney visited Newport, R. I., to interview city officials on the results obtained by using oil on macadam streets and the methods employed. They learned that Newport, having failed with crude oil, is now suc-

cessfully using a compound called "Dustoline." One coating lasts from eight to twelve weeks, the streets are kept in better repair, the binder held intact, and the dust is kept absolutely laid. New Bedford will probably experiment with a small portion of streets along the line of the Newport methods.

NEW YORK, N. Y.—Public Works Commissioner Dunne has announced that lack of funds with which to carry out public improvements will necessitate the discharge of a number of employees. This will affect about thirty inspectors in the Bureau of Highways and twenty-five in the Bureau of Sewers. Mr. Dunne stated, in his notice to the heads of bureaus that "failure of the Comptroller to certify contracts prepared, and the announced intention of holding street improvement contracts until all other contracts have been registered, is beginning to reduce the work in the bureaus." The entire Borough of Brooklyn is being affected by the situation, which is new in municipal affairs. Important work which it was expected would be completed this year cannot be started until spring, and, in consequence, building operations will be retarded.

ROCHESTER, N. Y.—Property owners on Harris street threaten to contest their paving assessment. The cause of the trouble is that on another street of the same length and not so wide the assessment was less. Moreover, the cost per square yard on the street with the low assessment was \$2.22, as compared with \$2.05 a square yard bid for Harris street. The cause of the difference is that it is customary to charge the approaches to intersections wholly to the street that is being paved.

ST. JOSEPH, MO.—The Phoenix Brick and Construction Company has refused to sign a contract for paving five blocks of Mitchell avenue and it is probable that the work will be readvertised. The attorneys for the company objected to the legal procedures leading up to the letting, claiming that the Board of Public Works should specify the kind of paving that was to be used in designating streets for improvement. For some time past the Board has refused to do this, holding that the ordinance passed authorizing the expenditure of money for the work states the kind of material to be used and that such specifications in the designating notices are superfluous.

Sewerage and Sanitation

BUFFALO, N. Y.—Health Inspector John H. Brown is investigating the condition of restaurants and some of them must now clean up or close up. Health Commissioner Wende declares the ultimate result of the investigation will be that restaurants will be licensed. Now anyone can start a restaurant, and the Department of Health has no supervision unless it becomes an absolute menace to health.

HARRISBURG, PA.—After having collected and examined more than 6,000 samples of milk from every section of the State, Commissioner Foust of the Dairy and Food Department declares that very few of them contain any traces of adulteration, and he says that the showing is as surprising as it is excellent. The greatest improvement, according to the Commissioner, is in Western Pennsylvania, where a few years ago there were many cases of adulteration. Some cases were found in Philadelphia

where formaldehyde was used, and the guilty ones will be prosecuted. The rigid inspection and enforcement of the laws governing dairies will be followed by Commissioner Foust and his corps of inspectors and chemists.

MICHIGAN CITY, IND.—The Board of Public Works has rescinded all action in connection with the proposed sewers in Tenth street, and will instruct City Engineer Miles to prepare plans for two sewers, one on either side of the street, instead of one in the center, as heretofore intended. This is a new procedure for the city, but Engineer Miles has submitted figures to show that it will be cheaper. The difference is found in the fact that in building a sewer in the center of a street that is paved the pavement must first be removed, sewer laid, earth replaced and tamped, and the pavement replaced.

NEW YORK, N. Y.—In the petition recently presented to Governor Hughes by Edward Hatch, Jr., Chairman of the Merchants' Association Committee on Pollution, to which reference was made in our last issue, the opinion of experts is cited that the health of the inhabitants of New York is menaced by sewage polluted waters, and reference is made to charts compiled by Dr. Jackson of the committee from 1901 to 1907 which indicate the prevalence of intestinal diseases near the borders of the rivers, which decrease as one recedes from the infectious influence of the sewer-burdened water. Mr. Hatch also states that extensive experiments have been made to prove that the sewage going into the East and North rivers was a source of disease. Laboratory examinations of flies trapped on piers on each side of the city showed matter deleterious to health on the feet or antennae and bacteriologists believe that the prevalence of disease in the poorer sections near the rivers is due to this.

PHILADELPHIA, PA.—Director Stearns of the Department of Public Works and Chief Webster of the Bureau of Surveys have been making a tour of New England, inspecting sewage disposal plants, to gain knowledge of the workings of the various systems in use. The information will be applied to local conditions in the preparation of plans for a \$50,000,000 municipal sewage plant. The cities visited included Boston, Lawrence and Worcester, Mass.

Water Works

ATLANTIC CITY, N. J.—The Water Commissioners, because of complaints received concerning the condition of the water, have had Henry Leffman, bacteriologist, of Philadelphia, Pa., make a chemical and bacteriological test. His report states that "the water supply of Atlantic City is of exceptionally high purity, being soft and almost free from bacteria."

FORT WORTH, TEX.—A fifteen-acre lake and a filtration system have been decided on by Commissioner Stephens for supplementing the present insufficient artesian water plant. The lake will be situated immediately south of the pumping station at the Holly plant and the surrounding ground will be laid out as a park. This plan is a substitute for a more extensive scheme for a reservoir, which has been abandoned on account of its expense.

GALESBURG, ILL.—General Manager Chubbuck has expressed his belief to the City Council that the city is overcharging the citizens for water, because of lack of economy in the management of the water plant. He considers 50 cents per thousand for the first three thousand feet an exorbitant price for the average consumer to pay.

BALTIMORE, MD.—Fire Chief Horton believes more fire plugs are needed and advises the flush hydrant style such as are used in Boston, Mass. These plugs may be located in the middle of the street, or anywhere; they form no obstruction on the sidewalk, as the hydrant comes only to the level of the pavement, and to it is

screwed a plug carried on the rear of every fire engine. Such a hydrant, according to the Chief, would give excellent service and would stop the complaints of property owners who do not want the unsightly plugs now in use on their premises.

CHEYENNE, WYO.—Mayor P. S. Cook, who has been conducting an investigation of the business management of the municipal water works of Cheyenne, concludes that if the city were paid at the regular rates for the water which it has given away free each year it would be out of debt in ten years. It was discovered that the Union Pacific Railroad has been getting 600,000 gallons every twenty-four hours without cost; that the ice companies have been permitted to cut ice from the city reservoirs without paying for the privilege, and that many others who have absolutely no right to it have been obtaining free water. As a result, the city finds itself without funds to pay for the bonds now due, which were issued to build the municipal water plant.

DAVENPORT, IA.—A break in one of the 16-inch mains of the Davenport Water Company occurred after the pressure had been increased for a fire. It was discovered by the fact that the pressure at the pumping station suddenly decreased to zero, but two million gallons of water escaped before the break could be located. It was found that the reason the water had not come to the surface before was because it had gone underground through the soft sawdust on the site of the old lumber yard nearby and had flowed into the river there. The pipe had been down about eighteen years.

SENECA FALLS, N. Y.—The engineers of the Water Works Company, which is opposing the granting of a certificate of public necessity to the village for the construction of a municipal water system, have been speaking in favor of cement pipe and have cited the successful use in New England. The Seneca Falls system is made up almost entirely of cement pipe and the total number of breaks within the past six months has been about double the average for the past six years. Moreover, the Committee on Fire Prevention of the National Board of Fire Underwriters in a report has recommended a replacement of all cement-lined pipes by cast-iron at Salem and Gloucester, Mass. The 22.4 miles of cement-lined pipe at Salem have been in use over thirty years, and the report says leaks and breaks have been frequent.

Street Lighting and Electric Power

BANGOR, ME.—The West Branch Driving and Reservoir Dam Company has practically completed surveys for another concrete and stone dam on the West Branch of the Penobscot. It will be located at the foot of Ripogenus Lake and nearly double the present storage capacity of 16,000,000,000 cubic feet. At the point where the dam will be built the lake is narrow, and on this account the length of the dam will probably be less than 200 feet, inclusive of the wings. The height will be about 60 feet. Ripogenus Lake is about three miles long and less than a mile wide. Above it is Chesuncook, the source of the Penobscot, sixteen miles long and two miles wide. At present the lakes are separated by a timber dam 47 feet high and about 500 feet long. The formation of the new dam will make one lake where there are now two, as the Chesuncook dam will be torn out and the Ripogenus Lake dam will place the lakes on the same level. The flowage lines of the proposed dam extend out through miles of woodland, back into Harrington Lake, seven miles from Ripogenus.

NEW HAVEN, CONN.—The gigantic power plant at Bull's Bridge was recently forced to shut down. The trouble was caused by the dry weather and the scarcity of water in the Housatonic river. This plant has a ca-

capacity of 10,000 horsepower and supplies electric light and motive power for trolley cars to Waterbury, New Britain, Plainville, Southington, Beacon Falls and Watertown. During the three years since its installation there have been a series of mishaps, owing to the water being too high or too low, leakage or bursting of the raceway, in each case again calling into commission the little steam plants formerly used, which are run under every pound of pressure to supply the power.

SALT LAKE CITY, UTAH.—About two hundred and fifty men, in three shifts, are working night and day to complete the six-foot trenches to receive the light and power wires of the Utah Light and Railway Company, which are now strung on poles along Main and intersecting streets. The trolley wires alone will remain above ground and these will be supported on poles located along the curb instead of in the center of the street.

SAN JOSE, CAL.—The committee of merchants and property holders has decided to award the electrolier contract to the Joshua Hendy Iron Works of Sunnyvale at \$125 each. There were slightly lower bids, but the design accepted is more artistic and the equipment of the company such that the work can be turned out rapidly and in perfect finish. The design will be used in other cities, where it will be known as the San Jose electrolier.

Fire and Police

CHICAGO, ILL.—Health Commissioner W. A. Evans has taken extraordinary precautions to prevent the spread of scarlet fever in the South Chicago Police District. After a conference with Chief George M. Shippey, Dr. Evans declared that each morning a notice of the number of cases of contagious disease, together with their location, will be sent to each police precinct and the police will be required to see that quarantine regulations are observed.

COHOES, N. Y.—The loss by fire in the city for the past three years aggregates \$112,946.88, which is an average loss of \$37,648.96, or about \$1.50 per capita, annually. The fire insurance at risk during the same period amounted to \$4,760,835, or an annual average of \$1,586,945, which shows that the fire loss is less than 2 1-2 per cent. of the amount of insurance carried.

TOLEDO, O.—Chief Knapp has assigned two patrolmen to duty on the new motor-cycles purchased for the department by the Board of Safety. From now on, mounted police will be on duty in Toledo at all hours of the day and night, and the Board contemplates adding more machines in the near future. In the opinion of Mr. McComber, a member of the Board of Safety, the motor-cycle is a great help to the Police Department.

SALT LAKE CITY, UTAH.—Mayor John S. Bransford has made his first official inspection of the Police and Fire Departments. He was accompanied by several Councilmen and was received by Acting Chief of Police John B. Burbidge. All the members of the Department were present when the Mayor entered the station and the patrolmen had been formed in two lines the length of the police station hall. The Mayor made a short address and made a thorough tour of the police station and jail. He then went to Fire Department quarters, where he looked over the equipment and horses and the firemen made a few exhibition runs.

Government and Finance

BOSTON, MASS.—The Finance Committee has suggested to the Mayor and City Council that not more than \$75,000 be raised by loan for extension of water mains, instead of the \$300,000 which was to have been considered by the Board of Aldermen. The committee finds that for the current fiscal year of 1907-08 there is available a balance which can be carried over, and the City Council

is asked, for the sake of preventing an unnecessary increase in the city debt, and as a matter of justice to the water takers, to make a specific appropriation of this surplus income for the extension of mains, that the pending loan order be reduced. Another move in the line of lessening taxation is shown in the fact that the overlay, or margin, retained to cover non-collections and abatements, which in 1906 was 3 1-2 per cent., has been reduced by the assessors to 2 1-2 per cent. This makes it possible to keep the tax rate at the usual figure of \$15.90, instead of \$16 per thousand, which was recently semi-officially intimated.

DULUTH, MINN.—Mayor Linley and the Finance Committee of the Common Council have recommended that the city offer 51 cents on the dollar for its special improvement bonds, which were issued for street improvement work. The bondholders sought to have them made a general obligation against the city, but the courts have held that the city is liable only for the amount of special assessment it has collected for the improvement. There is not much record of what assessments have been collected. Many have gone delinquent and been collected by the county without ever being turned over to the city, so the bondholders have not had much of a show. During the past few years the Council has been paying 61 to 65 cents on the dollar on these bonds, but more favorable decisions having been secured from the courts, the lower offer is made by the city to those bondholders that have not sold to the city or that have not refunded.

MCALISTER, I. T.—The City Council has taken steps looking to the establishment of the commission form of city government. A committee of three has been appointed by Mayor Chaney to investigate the matter and inquire into the feasibility of the change. Copies of the laws under which Galveston and Houston, Texas, operate have been sent for, and it is expected that the question of adopting the system will be submitted to the people at the earliest possible moment after the proclamation of statehood. A clause in the proposed State Constitution confers upon cities of given qualifications the power to adopt the commission plan if the voters so decree.

LOUISVILLE, KY.—Judge A. E. Richards, City Attorney, has rendered an opinion in regard to the diversion of moneys from the general purpose fund to the account of the Street Cleaning Department and the Fire Department. He said that under the charter, funds derived from taxation could not be borrowed by one department of another, but nothing is said of money raised by any other source. In this instance it is designed to divert the money received from the electric light franchise sold to the Kentucky Electric Company, which had been placed in the general purpose fund. Judge Richards is of the opinion that it can be borrowed and used for other departments without any violation of the charter.

NELSONVILLE, O.—A report filed with the State Bureau of Accounting shows a somewhat peculiar conduct of city government. John Lax, City Auditor, has private business demanding his attention. Treasurer C. L. Aumiller has issued warrants directed to himself and signed the Auditor's name. The Treasurer had not balanced his city depository account for more than a year. It was short \$275.79, which was promptly deposited. Chief of Police Isaac Warner keeps no account of arrests and Chief of Fire Department John Lowder has no record of fires. No plans, specifications or profiles of any city improvements are on file. No provision has been made to dispose of sewage, but a good record was made in cleaning up after the big flood last spring. Mayor James Sharp does the city plumbing, Vice-Mayor Emmet Keenan is also City Engineer. G. C. Silcott, member of Board of Public Service, sells coal to the municipal plants. Council-

man M. E. Kreig and L. H. Price sell lumber and other supplies to the city.

ROCK ISLAND, ILL.—A resolution was recently introduced in the Council to request the legislators of the district to present to the next Legislature a bill providing a law which would allow all Illinois cities of over 15,000 population, by a vote of the people, to adopt a commission form of government. Owing to a lack of information in regard to the details of such a plan this resolution was voted down by a vote of 11 to 2.

SYRACUSE, N. Y.—The defalcation in the City Treasurer's office will probably reach \$250,000. The embezzlements are all from local improvement payments, most of them ten years back. When payment was made the money was pocketed by some one in the offices, the charge against the property was left on the books, and when the property was advertised for sale the property upon which payment had been made was edited out of the advertisement. While the books of the City Treasurer have been examined annually the accountants have never examined the local improvement books. The money abstracted has been in amounts of from \$10 to \$1,000.

WHEELING, W. VA.—Harrisville, the county seat of Ritchie County, will be without any municipal taxation this year for the first time in the town's history. The announcement has just been made by the Mayor, Romeo H. Freer, a former Attorney General of the State. Harrisville owns its own electric lighting plant, and the profit from its operation, combined with the interest on the town's money in the banks, will afford ample revenue for all estimated municipal expenses, so that no corporate tax will be laid whatever. No other town in West Virginia ever enjoyed this distinction.

LONDON, ENG.—A deputation in behalf of the Association of Municipal Corporations representing every borough in England and Wales recently waited upon the Prime Minister at the House of Commons on the subject of town planning, and urged a measure which would obviate increased burdens in rates and taxes. In response, the Premier said that the whole matter needed controlling and that the only people in whose hands the power can be safely given are the municipal authorities on the spot. An enormous waste, he said, had been made in the past by the failure to anticipate the future, and it was to be hoped that similar mistakes might be avoided.

MUNICH, GERMANY.—Taxation in Munich is practically based on income. All houses of a lower rental than \$62 are free from water rate. All tenants paying between \$62 and \$75 pay a 3 per cent. water rate, but no demand is made for street cleaning, sewage disposal or lighting. Tenants paying above \$75 are rated at 12 cents yearly for every additional \$25, for street cleaning and refuse disposal. Upon a rent of \$100 a sewage rate of 3 cents is levied and 6 cents is charged upon every \$6 over \$100. The water rate is 3 per cent. up to \$75 and above the sum of 25 cents is levied for every \$6.

NEW YORK, N. Y.—At the suggestion of Mayor George B. McClellan, the Commissioners of the Sinking Fund have raised the rate on all long-time bonds issued to pay for general public improvements to 4 1-2 per cent. The rate on rapid transit bonds will remain at 4 per cent., and that on bonds deposited to the credit of the Sinking Fund will be reduced to 3 per cent. The increase on improvement bonds was made because it is necessary to raise a large sum of money or stop work on many large public contracts. The Mayor has notified the heads of departments to limit their expenditures to the lowest possible point consistent with efficient administration, and to enter into no new contracts, save such as are absolutely necessary, and to discontinue all work now in progress which can be stopped without injury to the city's interest. This

does not apply to work on school buildings nor to contracts on which large numbers of men are employed.

WASHINGTON, D. C.—The Commissioners have decided to make an important change in the provision for the erection of fire escapes on certain buildings in the District more than thirty feet in height. Captain William Kelly, Assistant Engineer Commissioner, recommended a change substantially as follows: "This form notifies the owner of the building that in its present condition it does not comply with the fire escape law and directs him to fill out certain blanks showing what he proposes to do in order to make the building conform to the law. Copies of the law, as amended, are attached to the notice, and also a copy of the order of the Commissioners, made in pursuance of the law. When the owner furnishes information to the Commissioners of what he proposes to do the Inspector of Buildings and the Chief of the Fire Department will reconsider the case and prepare a formal notice of the requirements of the law, which notice will be served upon the owner of the building in the same manner as is done at present."

McKEESPORT, PA.—The new police patrol stable adjoining Central Police Station is expected to prove a great convenience. It connects at the rear with the Prison Department, where prisoners are transferred from the wagon to the jail. One floor may later be fitted for the reception of female prisoners, as the hording of male and female prisoners in the one jail building, not separated, is contrary to law.

Refuse Collection and Disposal

DALLAS, TEX.—The City Commissioners will furnish water to the county for the sprinkling of the West Dallas pike, in order to save the county "yards of material that would be blown away" in a strong wind. Laying the nine inches of dust with oil was considered, but County Commissioner Pippin objected, on account of the cost of the material, the damage in the homes, and the expense of purchasing a gasoline engine with which to draw the water from the river.

NORFOLK, VA.—W. H. Peters, a member of the Board of Health, appeared before the Common Council to urge the necessity of the erection of a crematory of twenty to thirty tons daily capacity to cost \$25,000. He demonstrated that, from a health point of view, the matter was an important one, and cited the decrease of over twenty-five per cent. in the death rate in the city of Memphis, Tenn., since the installation of a crematory there. The matter is in the hands of the Street Committee, of which Mr. Hawks is Chairman.

SEABRIGHT, N. J.—Mayor George B. McClellan of New York and Governor Edward C. Stokes of New Jersey have received letters from Mr. William A. Street, president of the Seabright Beach Club, in which he calls their attention to the alleged illegal disposal of New York garbage. It is claimed that the refuse taken from New York City in scows is dumped into the sea within five miles of shore, instead of twenty-five, and that it has been swept by the tides upon the beaches of New Jersey resorts, to the discomfort of the residents and a menace to health. Governor Stokes in his reply expresses surprise at the recurrence of this condition of affairs, stating that last year, after a personal visit to the New York City authorities, the boats were ordered to unload below, where refuse would not be likely to return to the New Jersey shores.

Parks and City Beauty

HARRISBURG, PA.—The improvements of the grounds at the water works are attracting attention. The Commission has had a granolithic walk made, with broad stretches of sod laid on either side and a large flower

bed constructed in front of the engine room; the old sandstone fountain has been filled with dirt, and flowers planted, and the ivy planted several years ago around the base of the standpipe is spreading. As soon as the water Commission accepts the new well, improvements are contemplated for further beautifying the locality, which will include grading, extension of walks, parking and placing of benches.

ORANGE, N. J.—A bill will probably be presented to the Legislature in order to establish ownership of what is known as the Elmwood Park tract of land. It was originally intended to make a park of the section, but no deed was ever made to the city, although the real estate promoters never exercised ownership over the land. The conclusion is that the city has acquired ownership by adverse possession, the common law and other rules apparently being in its favor. At present the Shade Tree Commission is exercising a certain care and attention over the property, but it is desired to improve it and make it of general use.

SALT LAKE CITY, UTAH.—The Park Commissioners have selected a fountain to be placed in the new park built on the northwest corner of the City Hall Square. The center of the fountain will be rough figures, through which pipes will pass. The receiving basin is to be made of concrete in the form of a rectangle forty by fifty feet. The whole will be faced on four sides by rows of iron benches. In the pool water lilies and fish, and possibly some water fowl, will be placed. It is also the intention of the Commissioners to have an electrical display at the base of the fountain under the water of vari-colored lights.

Rapid Transit

BAYONNE, N. J.—Mayor Garven has instructed Elmer W. Demarest, City Attorney, to bring suit against the Public Service Corporation and also to apply for a writ to show cause why the company's franchise should not be forfeited. The Mayor declares the company has violated its franchise by failing to run all its cars through to the Bergen Point ferry. Some of the cars stop at twenty-third Street and are sent back to Jersey City, and the passengers wishing to go to the Point are obliged to pay an extra fare.

MEMPHIS, TENN.—Commissioner H. T. Bruce, in reply to his letter of inquiry apropos the interurban situation in Indianapolis, Ind., has received a letter from Mayor Charles A. Bookwalter of that city, in which he says: "We now have twelve interurban lines running into this city. They all come in under uniform franchises, the city having adopted five years ago a standard franchise. Under the terms of this franchise, any interurban road asking for permission to use the streets of the city must make application to the Board of Public Works, which then establishes the route they must travel in entering and leaving the city. All interurban cars must use the tracks of the local company. They are permitted to charge a five-cent fare, without transfer, inside the city limits. They pay to the city five cents for each car entering and leaving the city. This rate holds good for ten years. After the expiration of the ten-year period, they pay seven cents for the next ten years. Therefore during the life of the franchises, all of which terminate in 1933, they pay 10 cents. I understand that interurban companies pay to the local company four cents out of each fare collected for city passengers, in return for which the local company furnishes tracks, power, and central terminal facilities, all interurban cars coming to the interurban terminal station, which was constructed by the local company.

NORFOLK, VA.—Because of the continued inefficiency and unsatisfactory service of the Norfolk and Portsmouth Traction Company service, the Council has instructed the

City Attorney to investigate the company, with a view to having its franchise revoked. The Clerk of the Council is also instructed to communicate with the State Corporation Commission, asking for a speedy investigation of conditions.

GENOA, ITALY.—The Mayor has written to Mayor Taylor of San Francisco, Cal., for information as to the means adopted in that city to prevent accidents to pedestrians from cars. The Mayor states that the municipal administration of Genoa wishes to equip its trains with efficient apparatus and asks for data as to experiments made by the city of San Francisco, mechanical details and results.

PARIS, FRANCE.—The Municipal Council has decided to let the omnibus service of the city, provided the concessionaire will employ electric carriages, charge 10 to 20 centimes (2 or 4 cents), according to distance, appoint fixed stopping places and pay the city 4 1-2 per cent. of its gross earnings. Moreover, the new concessionaire must give its employees a share in the profits, but not by way of any increase in salary. The share is to be paid in two funds, the sick and benefit fund and the pensions fund, the former of which will also receive contributions from the company of 6 per cent. of the total wages paid, and from the employees of 2 per cent. of the wages received. Salaries are to be paid by the month. The minimum wage is fixed at \$30. Each employee is to have four holidays a month and ten consecutive days' leave each year.

Miscellaneous

BOGOTA, COLUMBIA, S. A.—Extensive public works are contemplated for Bogota. A new system of sewers and water works will be established, and new pavements laid. In the line of public building, new hospitals, public schools, abattoirs, markets, and 2,000 workingmen's model homes will be constructed. The conversion of the present horse car service into an electric line is also contemplated. All these improvements are reported to be under the control of English concessionaires, except the railways, which are controlled by American capital.

GRAND RAPIDS, MICH.—Engineer Lyman E. Cooley of Chicago, Ill., concurs in the report of Engineer W. Bunker, that deep water to the lake is the best means of settling the flood problem. Mr. Cooley says that a 21-foot channel, 400 feet wide, would take care of all the water passing through the city in the biggest flood. Engineer Bunker estimates such a channel could be built in four years at a cost of \$4,000,000, and that it could be maintained for \$8,000 a year. The city has already voted \$1,000,000 for flood protection.

HAVERHILL, MASS.—City Solicitor Essex S. Abbott has notified the Postal Telegraph Company that its poles on Broadway must be removed, in accordance with the directions of the Inspector of Wires. The company alleges that as the street railway company was receiving the benefit of the widening of the street for an extra track, it should bear the expense of moving the poles. Mayor Roswell L. Wood and the City Solicitor disagree with this view.

PORTLAND, ORE.—Because of numerous complaints, received from many sources, the Health and Police Committee of the City Council has unanimously approved a measure to prevent the playing of phonographs, graphophones, electrical pianos, or other automatic instruments, after 10 o'clock at night and before 7 o'clock in the morning. The measure also prohibits the operation of these instruments within two blocks of a church or place of public gathering while meetings are in progress. It is claimed that the midnight concerts have become a universal nuisance, and Councilman Wells cited an instance in Sellwood where church services are frequently interrupted by the operation of a phonograph.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Municipal Interest**FIRE PROTECTION REGULATIONS**

Lantry, Fire Com'r, vs. Hoffman, et al.—A system of perforated pipes in a building, connected with valves outside the building for the use of firemen, constitutes a "means of preventing and extinguishing fires," within the provisions of Greater New York Charter, providing that the owners of manufactories, office buildings, etc., shall provide such fire hose, fire extinguishers, and other means of preventing and extinguishing fires as the Fire Commissioner may direct. The court will take judicial notice of the purpose of installing perforated pipes in cellars and subcellars and having them connected with valves on the outside of the building. The fact that the Building Code provides for installing perforated pipes in buildings of a certain character, and confers certain powers upon the Building Department in reference to them, is not inconsistent with the exercise of jurisdiction over the same subject-matter by the Fire Commissioner. The owners of a building cannot escape liability for failure to comply with an order of the Fire Commissioners to install a system of perforated pipes because their tenant was in possession of the premises at the time the order was made and by the terms of the lease he was required to comply with all laws, orders, and regulations of the State and municipal authorities, since they as landlords had the right to enter upon the premises to comply with an order of the Fire Commissioner.—Appellate Term, New York Supreme Court.

SIDEWALK CONSTRUCTION

Town of Rayne vs. Harrel.—The town has a population of less than 2,500 inhabitants. It has the power delegated to it by the Laws of 1898 under which it claims to have the authority to require property owners to construct and maintain their sidewalks. Under that authority, it claims to have the right to construct the sidewalks for account of the owner. A paragraph reads: "To cause to be constructed and maintained sidewalks, determine materials, plans and specifications and grades on the same, and levy and collect taxes by special assessment for payment of same." The ordinance that plaintiff seeks to enforce was not drawn in accordance with the delegated power contained in this paragraph, whatever that power may be. The formalities have not been followed. The right to lien and privilege on property, as relates to local assessment for purposes of improvement, is statutory. There is no statute upon the subject.—Supreme Court of Louisiana.

MILK LICENSE

Miller vs. City of Birmingham.—Miller appealed from a judgment of conviction for the violation of an ordinance requiring a license for milk peddlers. The constitutional guarantee of a trial by jury does not apply to the violation of a city ordinance—under such an ordinance is a violation of the criminal laws. The license of \$15 is reasonable, whether considered as a mere police regulation, or the exercise of the taxing power for the purpose of revenue. No discrimination is made against peddlers when they are placed in the same class, although peddlers of other articles are placed in different classes. The license cannot be considered as a tax upon persons living beyond the city limits, for the tax is restricted to wagons peddling milk within the city limits. The judgment of the lower court was affirmed.—Supreme Court of Alabama.

CONDEMNATION OF LAND

City of Bluefield vs. Bailey, et al.—In a proceeding to condemn land for a city street, there is an order adjudicating that the city has right to condemn, and appointing commissioners to assess compensation for the land, and an order filing the report of the commissioners and allowing the money to be paid into court, and it is paid in. These orders are final in character, so as to give this court jurisdiction for a writ of error and supersedeas, where the right to take is in controversy, but not where the only question is the amount of compensation. A proceeding to condemn land for public use is a controversy concerning the title of land, so as to give jurisdiction for a writ of error. In a proceeding to condemn land by a city for a street, the defendant may deny that the council of the city has ordered its condemnation.—Supreme Court of Appeals of West Virginia.

INTERSTATE BRIDGE

Haeussler et al. vs. City of St. Louis, et al.—The Constitution of 1875 provides that the General Assembly shall not pass any local or special laws relating to bridges, except for the erection of bridges crossing streams forming boundaries between Missouri and any other State. The laws of 1905 authorize cities of 100,000 inhabitants or over to build or acquire a bridge over boundary streams between Missouri and other States, and to acquire land for approaches therefor. An act of Congress, June 25, 1906, authorizes the city of St. Louis to construct a bridge across the Mississippi river for railroad and general travel, and confers on the city the right of eminent domain for the acquisition of land for approaches thereto in Illinois, and the Revised Statutes in addition to St. Louis City Charter authorized the city to acquire property outside its limits for certain purposes and "for other purposes," and for public improvements, and to issue bonds for the construction of such improvements. Held, that the city was thereby expressly authorized to construct a bridge over the Mississippi river connecting the city with the opposite Illinois bank of the river, and to issue bonds not exceeding the city's constitutional debt limit to pay therefor. A bridge such as that proposed, to be used both for railroad and general travel, was a public highway, and authorized as a legitimate public municipal purpose and a proper public improvement, though a portion thereof was necessarily beyond the city's corporate limits. The city of St. Louis having been authorized by charter, and by the Laws of 1905, to construct a bridge for railroad and general purposes across the Mississippi river between the city and the State of Illinois, which bridge was to remain the property of the city and in its control, ordinances providing for the issuance of bonds to pay the cost of the bridge were not invalid under the Constitution of 1875, prohibiting any grant of public money or funds to private individuals or associations, and prohibiting the lending of public credit to any corporation or the subscription by a municipality to the capital stock of any corporation or the making of a donation in aid thereof, because the city was authorized to grant a non-exclusive franchise to corporations to use a bridge when constructed. The Constitution of 1875, as amended, authorizes the city of St. Louis at any time to issue bonds with the assent of the voters, to the amount, including outstanding indebtedness other than that specified, of 5 per cent. of the taxable property of the city, to be ascertained as provided, without limitation as to the purpose for which the bonds may be issued, and the City Charter, as amended, authorizes the city by ordinance to borrow money on the city's credit by the issuance and sale of bonds for such purpose as may be required for current expenses, and for such other purposes as may be authorized by the charter and the Constitution of the State. Held, that the city, being authorized to contract a debt for the construction of an interstate bridge across the Mississippi river, was authorized to issue negotiable bonds either in the form of coupon or registered bonds, or both, for money borrowed to pay the cost of the bridge.—Supreme Court of Missouri.

INADEQUATE DAMAGES

Anglin vs. City of Columbus.—In an action for damages for personal injuries, as a general rule the amount of damages is a question for the jury; but if the evidence authorizes a recovery by the plaintiff, and the verdict finding in favor of the plaintiff's right to recover fixes such a small amount of damages as will justify the inference of gross mistake or undue bias, a new trial should be granted. Under the evidence submitted in this case, a verdict in favor of the plaintiff for \$100 was so small as to require the grant of a new trial under the rule above stated.—Supreme Court of Georgia.

RIGHT TO LAY PIPE IN STREET

Colegrove Water Co. vs. Hollywood.—Where plaintiff was the owner of the fee, or was the licensee of the owners of the fee, of portions of certain public streets, he had the right thereby to lay pipes in those portions of the bed of the street for conducting water across the street, so long as they did not interfere with its use by the public, and to make the necessary excavations in the street to enable him to effect his purpose, where he gave notice of his intention to the city and offered to secure it against any damage. A city ordinance, forbidding the laying of any pipe in a public street without first obtaining from the city board of trustees the privilege of using such public street for this purpose, has no application to the rights of the owner of the soil covered by a public street to use it in a manner not in conflict with the public use, since he is merely exercising one of the incidents of the ownership which, in dedicating the highway, he has retained in himself.—Supreme Court of California.

NEWS OF THE SOCIETIES

League of Wisconsin Municipalities.—At the ninth annual conference, August 14-16, at Lacrosse Wis., Mayor W. A. Anderson delivered the address of welcome and Mayor F. L. Doyle of Fond du Lac responded for the League. Among the papers read were: "System of Special Assessments for Improvements," by Assistant United States Attorney E. J. Henning of Milwaukee. The presidential address was delivered on the second day of the meeting by Mayor R. E. Minnehan, Green Bay. Hon. Francis E. McGovern, District Attorney of Milwaukee, spoke on "Political Corruption—Its Cause and Cure." W. G. Kirchoffer, C. E., of Madison, spoke on "Oil Road and Tar Macadam." Alderman F. Stiglauer, Milwaukee, addressed the meeting on "Recent Legislation for Milwaukee." "Public Utilities" were discussed by J. A. Aylward, City Attorney, Madison. Other papers were: "An Information Bureau for City Officers," by Hon. H. E. Legler, Secretary Wisconsin Library Commission; "Recent Municipal Legislation," Mayor Burt Williams, Ashland; "Appraisal of Water Plant," Charles B. Burdick, C. E., Chicago, Ill. In these papers and in the discussions following practically all branches of municipal government were touched on. Among the most practical subjects handled were street paving and the procedure for acquirement by municipalities of water works systems. The new Public Utilities law will figure prominently in the acquisition of water works, such, for instance, as is now going on in Racine. There the local company may go before the Commission at any time before the close of the year and secure an indeterminate franchise annulling the present one and making all proceedings for the acquirement of the plant by the city entirely different. In that event the matter will have to go before the Circuit Court and if the proposed franchise is sanctioned the Commission will then appraise the plant and fix a franchise. Officers for the following year were elected as follows: Mayor Currens, Two Rivers, President; Mayor Bolens, Point Washington, Vice-President; W. G. Kirchoffer, Madison, Secretary. The city of Oconomowoc was selected as the place for the next annual meeting.

International Housing Congress.—Four hundred delegates from eleven European countries, as well as from the United States, Australia and New Zealand, attended the International Housing Congress, August 5, at London, England. Sir John Dixon-Poynder, Bart., M.P., President of the National Housing Reform Council, delivered the address of welcome. Mr. John Burns welcomed the delegates on behalf of the Prime Minister and the Government to the "ancient and millioned peopled" city of London. He stated that he believed that conditions were improving in London, as indicated among other signs by the fact that there were 50,000 vacant houses in London, showing that a rural return was going on. Mr. Burns announced his intention of introducing a housing bill in Parliament next year. Alderman William Thompson, London, in his presidential address favored the creation of a strong central body in every State to coordinate public and private enterprise more effectively than at present. The subject of "Housing Inspection" was taken up by three speakers: J. H. Faber, Zwolle, Hol-

land; W. de Man, Utrecht, Holland, and Harold Shawcross, Richdale, England. The first two speakers on this subject explained the Dutch Housing and Health law enacted in 1901 and gave an account of the work done under it. Mr. Shawcross spoke of the financial side of the problem, stating that as 60 years was the life of a cottage the sum of half of one per cent. a year would repay the cost at the end of its usefulness. The "Land Question" was dealt with by Dr. Wilhelm Mewes, of Düsseldorf, who showed the necessity for a well-thought-out land policy in all towns. He would provide for future growth by purchase of outlying land or reservation yards in the built-up sections, all to be done under building laws varying according to zone. "Home Building and Management" was taken up in a paper by the Secretary of the Congress, Mr. H. R. Aldridge, of Manchester. He contrasted block dwellings with cottages very much to the advantage of the former as to cost. Mr. M. L. Ferland, of Paris, spoke of "Credit and Finance," with special reference to conditions in France. Dr. J. Slublen, of Berlin, read a paper on "Town Planning and Building Laws." Describing conditions in Germany, he stated that both town planning and building by-laws had long been dealt with in Germany as matters of science and art. Professor E. Mahaim, Belgium, spoke of "Means of Transit" in its relation to the housing problem. "Rural Housing" was dealt with by M. E. Tibbant, Brussels; Miss C. Cochrane, England, and Mr. P. Morrell, M.P., England. A number of other speakers followed and the regular sittings were brought to a close.

Louisiana State Firemen's Association.—The State Firemen's Convention, which met at Thibodaux, La., August 15-16, elected J. M. Wright, of Gretna, President; Michael Levy, of Plaquemine, Vice-president; J. Kleinpeter, of Gretna, Secretary; R. M. Munch, of Gretna, Treasurer; Charles Riviere, of Thibodaux, Statistician. The next convention will be at Baton Rouge.

New York State Firemen's Association.—At the Elmira Convention, August 20-23, the following officers were elected for the ensuing year: President, Edward F. Kelly, of Elmhurst; Vice-president, John L. Kyne, of Syracuse; Second Vice-president, Fred A. Davis, of Fort Edward; Secretary, Thomas Honohan, of Frankfurt; Treasurer, John P. Powers, of Ossining; Member of Executive Committee, William E. Everett, of Jamaica; Trustees of the Firemen's Home at Hudson, George W. Anderson, of New York; William H. Swarthout, Flatbush, and George T. Kelly, of Yonkers.

North Carolina State Firemen's Association.—The twentieth annual convention of the State Firemen's Association, to quote President James D. McNeill, for fourteen years at the head of the Association, was the largest and most representative body of firemen that ever assembled in the State. The election of officers resulted as follows: President, James D. McNeill, of Fayetteville; First Vice-president, A. H. Boyden, of Salisbury; Second Vice-president, J. Frank Maddy, of Durham; Secretary, W. C. Von Glahn, of Wilmington; Treasurer, R. C. Taylor, of Winston-Salem; Statistician, W. P. Monroe, of Wilmington. Although the matter was not definitely settled, it is probable that the next convention and tournament will go to Newbern.

Calendar of Meetings

- August 25-30.**
Virginia State Firemen's Association.—Convention and tournament, Newport News.—G. C. Cummings, Portsmouth, Secretary.
- August 27-30.**
Traveling Engineers' Association.—Annual convention, Chicago, Ill.—W. O. Thompson, Secretary, Oswego, N. Y.
- September 2.**
Rhode Island State Firemen's League.—Tournament, Warren, R. I.—Fred. W. Cady, Secretary, East Providence.
- September 5-7.**
National Firemen's Association.—Convention, Oklahoma, Okla.—Peter J. McCarthy, Secretary, Box 600, St. Louis, Mo.
- September 10-12.**
League of Third Class Cities of Pennsylvania.—Convention, McKeesport, Pa.—Edward C. Charlton, Secretary, Bradford, Pa.
- September 10-12.**
Association of Edison Illuminating Companies.—Annual convention, Hot Springs, Va.—S. C. Mumford, Assistant Secretary, Detroit, Mich.
- September 11-13.**
New England Water Works Association.—Annual convention, Springfield, Mass.—William Kent, Secretary, Narragansett Pier, R. I.—Office, Tremont Temple, Boston, Mass.
- September 13-14.**
Mayors' Association of Illinois.—Second annual meeting, Bloomington, Ill.—Ex-Mayor McCastrin, Rock Island, Ill.
- September 17-19.**
National Association of Controllers and Accounting Officers.—Second annual convention, Hotel Jefferson, Richmond, Va.—Howard C. Beck, Secretary, Detroit, Mich.
- September 17-19.**
League of Iowa Municipalities.—Tenth annual convention, Council Bluffs, Iowa.—T. G. Pierce, Secretary, Marshalltown, Ia.
- September 18-20.**
Michigan Gas Association.—Sixteenth annual meeting, Battle Creek, Mich.—Alonzo P. Ewing, Secretary.
- September 18-20.**
League of American Municipalities.—Annual convention, Jamestown Exposition.—John MacVicar, Secretary, Des Moines, Ia.
- September 23-28.**
National Irrigation Congress.—Fifteenth annual convention, Sacramento, Cal.
- September 30-October 4.**
American Public Health Association.—Thirty-fifth annual meeting, Atlantic City, N. J.—Dr. Charles O. Probst, Secretary, Columbus, O.
- October 1-4.**
American Society of Municipal Improvements.—Annual convention, Detroit, Mich.—George W. Tillson, Secretary, 831 Ocean avenue, Brooklyn, N. Y.
- October 8-11.**
International Association of Fire Engineers.—Thirty-fifth Annual Convention, Washington, D. C.—James McFall, Secretary, Roanoke, Va.
- October 10-12.**
American Electro-Chemical Society.—Fall meeting, Chemists' Club, 108 West 55th street, New York City.—Dr. Joseph W. Richards, Lehigh University, South Bethlehem, Pa.
- October 14-16.**
American Street and Interurban Railway Engineering Association.—Annual convention, Atlantic City, N. J.—S. W. Mower, Secretary, Southwestern Traction Co., London, Ont.
- October 14-18.**
American Street and Interurban Railway Association.—Annual convention, Atlantic City, N. J.—B. V. Swenson, Secretary, Engineering Societies Building, 33 West Thirty-ninth street, New York.
- November 12.**
National Tax Association.—Conference, Columbus, O.
- November 19.**
National Municipal League.—Annual convention, Providence, R. I. (in conjunction with the American Civic Association).—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.
- December 26.**
International Sanitary Convention of American Republics.—Third international meeting, Mexico City.—Surgeon General Walter Wyman, Chairman, International Sanitary Bureau, Public Health and Marine Hospital Service, Washington, D. C.

PERSONALS.

BRANSFORD, JOHN S., Salt Lake City, Utah, has been elected Mayor of the city by the City Council to succeed Ezra Thompson, who resigned on account of ill health; A. S. Fowler has been retained as private secretary.

CRONIN, JOHN R., Mayor of Joliet, Ill., and Alderman Harney have returned home after four weeks spent at Mt. Clemens, where they followed the health programme.

DE NYSE, WILLIAM H., City Engineer of Long Branch, N. J., for twenty years, and also of the Borough of Deal, died August 21, of Bright's disease, aged 52 years. Mr. De Nyse was a life long resident of Long Branch, made the survey for the new ocean front improvements and was prominent in city affairs.

ETNYRE, S. L., City Engineer of Council Bluffs, Ia., and Alderman Younkerman, Chairman of the Council Committee on Fire and Light, have been making an investigation of and testing the fire hydrants of the Council Bluffs Water Company.

HAINER, M. LOUIS, Mayor of New Castle, Pa., has returned from the Eagles' Camp, along the Slippery Rock, where he spent six weeks.

HALL, GEORGE, Mayor of Ogdensburg, N. Y., has resigned, as he will be away from the city most of the time during the remainder of his term.

HOWELL, WILLIAM A., Principal Assistant Engineer of the Street Department of Newark, N. J., has been appointed Engineer of the Department by the Board of Street and Water Commissioners on recommendation of Chief Engineer M. R. Sherrerd, vice Louis C. Dittler, who died August 1, at a salary of \$2,500 per annum; also the following promotions: George C. Brandley, Principal Office Assistant, from \$2,000 to \$2,200 per annum; Charles A. Stilger, from Engineer of Construction at \$1,800, to Principal Assistant Engineer, at \$2,000 per annum; Walter W. Kane, from first Assistant Engineer at \$1,600, to Engineer of Construction at \$1,800 per annum; David M. Crabb, from transit man at \$1,100, to assistant engineer at \$1,200 per annum; Monckton M. Mitchell, from leveler at \$900, to transit man at \$1,000 per annum; Clifford L. Landmesser, from leveler at \$900, to transit man at \$1,000 per annum. The board also authorized the following promotions in the engineering division of the Sewer Department because of a vacancy in the position of Engineer of Construction: Harry D. Franklin, from assistant engineer at \$1,400, to engineer of sewer connections, at \$1,600 per annum; Goline Doremus, from assistant engineer at \$1,400, to first assistant engineer at \$1,500 per annum. In the Department of Water the following employees were made permanent: Herman Rosentreter, assistant engineer to principal assistant engineer, at \$2,000 per annum; Robert C. Scholz, from transit man to assistant engineer, at \$1,200 per annum.

JOYNER, W. R., Mayor of Atlanta, Ga., will spend his vacation traveling with the baseball team of his city, which is leading the Southern League, and will witness games in four cities to encourage the boys under Manager Smith.

MCCLELLAN, GEORGE B., Mayor of New York, N. Y., after a month in Maine, was at his desk for a week and returned to Maine for three weeks more. Elias Goodman, Vice-Chairman of the Board of Aldermen, is now Acting Mayor, Patrick F. McGowan, President of the Board of Aldermen, being out of the city.

PATENT CLAIMS.

862,292. Culvert. Martin J. Stoffer, Capac, Mich. Serial No. 375,091.

A culvert including a plurality of sections having strengthening ribs projecting within the culverts, truss rods seated in said ribs and extending longitudinally of the culvert, and means engaging the truss rods for clamping the culvert sections in assembled position.

862,318. Paving Material and Manufacture Thereof. Jesse A. Dubbs, Pittsburg, Pa. Serial No. 343,688.

As an improvement in the art of forming paving material, the method herein described which consists in thoroughly mixing a body and cement adding asphalt to such mixture and finally mixing water with the mingled body, cement and asphalt.

862,489. Pump-Cylinder for Water-Lifts. Lewis C. Lewis, Columbus, Ohio, assignor to The Monarch Manufacturing Company, Columbus, Ohio, a Corporation of Ohio. Serial No. 294,697.

In a pump cylinder for water lifts, a piston head working in the cylinder, provision for establishing an upper and a lower chamber within the cylinder and dividing the cylinder into two parts, provision for establishing communication between the parts of the cylinder on each side of the chambers independent of said chambers, provision for conducting water to the lower chamber and conducting water from the upper chamber, a valve sleeve extending through the upper chamber and having ports communicating therewith, a valve sleeve extending through the lower chamber having a plurality of ports, some communicating with the lower chamber and others communicating with the parts of the cylinder on each side of the chamber, a valve working in the upper sleeve and coacting with the ports thereof to alternately cut off and establish communication with the upper chamber and the cylinder on each side thereof, and a valve working in the lower sleeve and coacting with the ports thereof to alternately cut off and establish communication between the lower chamber and the parts of the cylinder on each side thereof.

862,584. Water-Meter. Walter S. Pollard, Philadelphia, Pa. Serial No. 310,081.

In a meter, piston cylinders having fluid ports and passages communicating therewith, a piston in each of said cylinders, a cam member carried within one of said pistons, and a rotatable member actuated thereby and adapted to actuate a registering mechanism.

862,593. Fire-Hydrant. Charles C. Steiner, Philadelphia, Pa. Serial No. 360,746.

The combination with a hydrant casing and its stand-pipe of a steam pipe closely coiled around the stand-pipe, said coils snugly fitted one against the other to provide a compact steam jacket, the inlet of which is above the surface of the ground and is adapted to receive the discharge end of a steam hose, the lower section of the coil being provided with a lateral extension having a drip, a steam exhaust pipe rising upwardly from said extension to a point opposite the steam inlet, a safety valve adapted to be removably fitted to said outlet, a pressure gauge adapted to be removably fitted to the inlet end of the steam pipe, a drip valve located in said extension and means carried by the stand-pipe for supporting the steam coil.

862,673. Automatic Movable Crest for Dams. George F. Stickney, Albany, N. Y. Serial No. 351,386.

A dam composed of a stationary member and a plurality of movable members hinged to said stationary member, said movable members being formed with hollow airtight compartments, and said stationary member being formed with a hollowed-out portion for accommodating said compartments, and a permanently unobstructed passageway from said hollowed-out portion to the up-stream side of the dam.

862,828. Car-Fender. Peter J. Leahy, Turcotte, Quebec, Canada. Serial No. 347,832.

In a device of the character described, a downwardly and rearwardly movable fender, suspended means for supporting said fender, guide-links and brackets, a retractile buffer and means connecting said buffer with said supporting means.

862,867. Pneumatic Pumping Apparatus. Lewis W. Eggleston, Appleton, Wis. Serial No. 308,498.

A pneumatic pumping apparatus comprising in combination with a water main, a cylinder having a communicating pipe leading therefrom to said main, a piston in said cylinder, an inverted air-compression cylinder, a valve-regulated pipe communicating with the latter, rods connecting the flanges and the ends of said cylinders, an adjustable plate having apertures through which said rods pass and set screws for holding the plate in adjusted position, a spring interposed between said plate and one of said pistons, as set forth.

TRADE NOTES

Anti-smoke Fuel.—Patrick Moran, of P. Moran Co., contractors, of Pittsburg, Pa., has assumed charge of the local business of Michael Andes, an inventor of a smokeless fuel. A test of this material—a combination of anthracite and bituminous coal slack with cement—was recently made under the boiler of a steam shovel near the Twenty-second ward engine house, Northumberland avenue. According to the reports of the test the fuel is 60 to 75 per cent. smokeless, and its heating qualities are not diminished. Smoke Inspector William H. Rea and several of his assistants witnessed the test. Mr. Andes intends to visit other cities and demonstrate the usefulness of his invention to officials having such matters in charge.

Artesian Well.—Johnson and Flemming, well-drillers, Tennessee Trust Building, Memphis, Tenn., have completed a well which is claimed to be the best well ever drilled in the central western part of Arkansas. The well was drilled at the plant of the Pine Bluff Light and Water Company. A test showed a capacity of 1,010,000 gallons for 24 hours. The well was sunk to a depth of more than 800 feet.

Cement.—The Washington Portland Cement Company and the Superior Portland Cement Company, Seattle, Wash., hope soon to be able to take care of the local market. The Washington Portland Cement Company now has a plant at Concrete, at the junction of Baker and Skagit rivers, with a capacity of 800 barrels a day. The Superior Portland Cement Company, now constructing a plant a half a mile below that at Concrete, has decided to increase the capacity of the plant to 1,500 barrels a day. A mountain of shale and limestone located at the headwaters of the river furnishes an abundance of suitable raw material.

Steam Turbines.—The Allis-Chalmers Company, Milwaukee, Wis., has recently closed contracts with the cities of Columbus, Ohio, and Dunkirk, N. Y., for turbine units to be installed in their municipal lighting plants. The reasons for the choice of turbines were small floor space needed, absence of expensive foundations, and comparatively small operating expense. The city of Columbus chose a 1,000 K.W. machine, direct-connected to a 1,000 K.W. alternator of the same design, wound for 60 cycles, 3-phase, 2,300 volts. The city of Dunkirk selected a 500 K.W. turbine, direct-connected to a 500 K.W. alternator, wound for 60 cycles, 2-phase, 2,300 volts.

Trade Catalogues.—The Carnegie Library of Pittsburg, Technology Department, is making an extensive collection of trade catalogues. These books will be given a prominent place on the shelves accessible to the public, and carefully indexed according to firm name and subject. Advertisers in the MUNICIPAL JOURNAL AND ENGINEER and others are invited to send their trade publications to H. W. Craver, Technology Librarian, Carnegie Library, Pittsburg, Pa.

Rubber Belting.—The Boston Belting Company, Boston, Mass., manufacturers of rubber belting, hose, packings and other goods, publishes as an advertisement one of King's Booklets, "The Pennsylvania Railroad Tunnels and Terminals in New York City." The booklet is well illustrated, and contains interesting information in a convenient form.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Street Improvements				
New Jersey	Hoboken	August 28, 8 P.M.	Repaving 3 sts. with present Belgian block, to new grade.	James H. Londrigan, City Clerk.
New Jersey	Fort Lee	August 28, 8 P.M.	Grading Myrtle Ave. at Coytesville.	Michael Sullivan, Borough Clerk.
Ohio	Cincinnati	August 29, noon	Grading, paving etc., Beckman St.; cost, \$24,354.	C. N. Dannenhowe, City Eng'r.
Pennsylvania	Smethport	August 29, 6 P.M.	22,000 sq. yds. paving.	W. G. Holzer, Town Clerk.
Pennsylvania	Norristown	August 29	Grading 10,600 cu. yds; also 24,000 cu. yds.	S. Cameron Carson, Boro. Engr.
Missouri	Kansas City	August 29	Asphalt pavement, 5 sts.; artificial stone sidewalks, 8 sts.	E. A. Harper, City Engineer.
Indiana	Tipton	August 30, 9 A.M.	Constructing 40 gravel roads, Cicero, Jefferson, Wildcat twps.	J. F. Barlow, County Auditor.
Ohio	Wauseon	August 30, 10 A.M.	Grading and graveling half-dozen county roads.	J. F. Merrill, Co. Auditor.
Ohio	Madisonville	August 30, noon	Improving Camargo Pike, Columbia Township.	Fred Dreihls, County Clerk.
Ohio	Cincinnati	August 30, noon	Repair of Shady Lane Road, Miami Twp., Spec. No. 662.	Fred Dreihls, Clk. Co. Com'rs.
Missouri	Marshfield	August 30, noon	Constructing 98,000 ft. macadam street, 7,200 ft. stone gutter.	W. P. McKnight, City Clerk.
Wisconsin	Waukesha	August 30, 2 P.M.	Constructing culvert over White Rock Ave., replacing old one.	John P. Dey, Clk. Bd. Pub. Ser.
Ohio	Woodsfield	August 30	Grading, draining and macadamizing W. Court St.	Geo. P. Dorr, Village Clerk.
Pennsylvania	Towanda	August 30	Constructing 6,600 ft. road 16 ft. wide; 4,638 ft. 14 ft. wide, 7,361 ft. 16, 18, 22 ft. wide in Bradford County.	Jos. W. Hunter, Harrisburg, Com'r.
Illinois	Paxton	August 30	Improving a road.	C. A. Swanson, Town Clerk.
Ohio	Clyde	August 30	Vit. brick paving, stone curb, etc., Railroad Ave.	Will H. Bacon, Village Clerk.
Wisconsin	Milwaukee	August 31, 10:30 A.M.	Paving 2 sts. granite, one sandstone on concrete, curb, etc.	C. J. Poetsch, City Engineer.
Indiana	Greencastle	August 31, 11 A.M.	Macadamizing 3,600 ft., also 15,633 ft. of road.	C. C. Hurst, County Auditor.
Pennsylvania	Ridgway	August 31, noon	Improving Main St., inc. 2,000 cu. yds. exc., 8,100 sq. yds. brick on concrete, 6,200 ft. curb, 700 cu. yds. masonry, 575 cu. yds. concrete foundation, 550 cu. yds. foundation excavation.	Geo. F. Greiner, Boro. Clerk.
Indiana	Huntington	August 31, 2 P.M.	Constructing gravel road in Warren twp.	County Commissioners.
Wisconsin	Neenah	August 31	Macadamizing Main Street.	W. W. Read, City Engineer.
South Carolina	Yorkville	August 31	Macadamizing sundry streets.	I. W. Johnson, Chm. St. Com.
Minnesota	Devil's Lake	September 1	Grading certain streets.	The Mayor.
New York	Jamestown	September 2, noon	33,000 ft. cement curb and gutter, 30 concrete catch basins, etc.	C. G. Jones, City Engineer.
Indiana	Gibson	September 2, 1:30 P.M.	Constructing old State road, 8,169 ft. long.	County Commissioners, Salem.
Iowa	Ottumwa	September 2, 8 P.M.	Laying 15,300 yds. one-course, vit. brick on 6-in. crushed stone, sand filler; 8,450 ft. 6 x 20 in. and 2,400 ft. 4 x 12-in. cement curb.	E. H. Mather, Chm. St. Com.
Wisconsin	Fond du Lac	September 2	Paving 1st brick; several asphalt; comb. curb and gutter.	L. A. Pettibone, Bd. Pub. Works.
Ohio	Pleasant Ridge	September 2	Constructing artificial stone sidewalks on several streets.	W. C. Davies, Clk. Bd. Pub. Serv.
Pennsylvania	Oakmont	September 2	Grading 10,000 cu. yds.; curb, 7,100 lin. ft.; paving 16,000 sq. yds. Oakmont Ave.; also grading 9th, 10th, and D Sts.	Douglas & McKnight, Pittsburg, Eng.
Indiana	La Grange	September 2	Constructing cement sidewalks.	V. D. Weaver, Auditor.
Indiana	Valparaiso	September 2	Constructing a stone road.	Stephen P. Corboy, Co. Auditor.
Ohio	Cadiz	September 2	Macadamizing 4,400 feet of road.	John S. Lacey, County Auditor.
Washington	Olympia	September 2	Paving 8,000 sq. yds. Main St.; brick, asphalt, etc.; 1 mile concrete curb and gutter.	J. R. Dever, City Clerk.
Indiana	Sullivan	September 2	Constructing gravel road 2,515 ft. long, Curry township.	E. E. Russell, County Auditor.
West Virginia	Keystone	September 3, 10 A.M.	Paving and sewer on Main and Bridge streets.	G. T. Epling, Mayor.
New York	Albany	Sept. 3-5, noon	Construction of various state roads.	Frederick Skene, State Engineer.
Ohio	New Philadelphia	September 3, noon	Laying 10,600 sq. yds. brick pavement.	Clyde J. Knisely, City Engineer.
Ohio	Canton	September 3, noon	Laying 42,000 sq. yds. vit. block; cost \$82,425.	W. E. Sarver, City Engineer.
Dist. of Col'bia	Washington	September 3, noon	Grading Albemarle St.; appropriation, \$8,500.	Jay J. Morrow, Eng'r Com'r.
Indiana	Covington	September 3, 1:30 P.M.	Constructing 2 gravel roads 5 miles long; 4 stone, 9 1/2 miles.	Fountain County Commissioners.
Virginia	Yorktown	September 3, 2 P.M.	Constructing two miles of road.	D. R. Norment, Magruder, Va.
New York	Cohoes	September 3, 8 P.M.	Granite block paving and curb, 3 sts.; concrete walk on bridge.	Charles H. Van Aiken, City Eng'r.
Colorado	Idaho Springs	September 3	Constructing and repairing 1 1/2 miles wagon road.	T. W. Jaycox, Denver, State Eng'r.
Ohio	Marion	September 3	Laying 12 sandstone sidewalks.	Geo. E. Dwyer, City Engineer.
Maryland	Snowhill	September 3	Grading and macadamizing two miles of road.	County Commissioners.
Ohio	Toledo	September 3	Grading, draining, bridging and macadamizing Otter Crk rd.	J. A. Kerr, Clk. Co. Commissioners.
Pennsylvania	Scranton	September 3	Laying flagstone sidewalks on several streets.	C. R. Acker, Dir. Dept. Pub. Works.
Illinois	Bearstown	September 3	Laying 18,460 sq. yds. brick on concrete; cost, \$81,528.	C. W. Brown, Jacksonville, Engr.
Tennessee	Jacksboro	September 3	Constructing roads.	R. B. Baird, Campbell Co. Rd. Com'r.
Delaware	Wilmington	September 3	Building a macadam road.	Francis A. Price, Highway Com'r.
Indiana	Sullivan	September 3	Constructing 22,515 ft. of gravel road.	County Commissioners.
Indiana	Monticello	September 3	Grading, draining and paving several roads with stone.	J. L. Ackerman, Co. Auditor.
Ohio	Cincinnati	September 3	Constructing artificial stone sidewalks on several streets.	M. J. Keefe, Clk. Bd. Pub. Service.
Louisiana	Lake Charles	September 3	Constructing 15 miles cement walk, also brick or cement curb.	C. H. Winterhalter, Mayor.
Ohio	St. Bernard	September 3	Improving Sullivan Ave and Carthage Pike.	Geo. Schroeder, Village Clerk.
New York	Elmira	September 4, 11 A.M.	Laying 2,200 yds. vit. block and asphalt on concrete, etc.; 2,090 ft. curb.	S. F. Warner, City Clerk.
New York	Brooklyn	September 4, 11 A.M.	Paving, curbing, etc., portions of various streets.	Bird S. Coler, Boro. Pres.
New York	Buffalo	September 4, 11 A.M.	Paving and repairing portions of 10 streets.	F. G. Ward, Com. Pub. Works.
Rhode Island	Providence	September 4, noon	Constructing 13 State roads, about 21 miles long.	Arthur H. Blanchard, Asst. Eng'r.
Indiana	Bloomington	September 4, 2 P.M.	Constructing pike roads Nos. 1, 2, 3, 4, Salt Creek twp., 12,290 ft. long.	Samuel M. Kerr, Co. Auditor.
Ohio	Toledo	September 4	Repairing stone road, Maumee to Waterville.	D. T. Davies, Jr., Co. Auditor.
Tennessee	Johnson City	September 5, noon	Paving 4,800 sq. yds. 7 s.s. good material, 22,000 sq. ft. concrete sidewalk, 4,600 lin. ft. concrete curb, 4,200 ft. 8-inch vit. sewer, etc.	E. Ellsworth, Recorder.
Ohio	Carrollton	September 5, 3 P.M.	Grading and macadamizing 5 miles road, Springfield township.	R. H. Lee, Engineer.
Oklahoma	El Reno	September 5, 8 P.M.	Brick paving, 38,013 yds. on 5-in. concrete asphalt filler; also 4,922 ft. stone curb.	L. G. Adams, City Clerk.
Ohio	Wilmington	September 5	Constructing Road No. 110, Union township.	J. A. Brown, Engineer.
Indiana	Evansville	September 5	Large amount of paving in County.	Vanderburg County Comrs.
Wisconsin	Janesville	September 6, 2 P.M.	41,825 yds. brick paving, etc., E. Milwaukee St., 2 alleys.	C. V. Kerch, City Engineer.
Indiana	Decatur	September 6	Constructing macadam road, Monroe; gravel rd., Preble twp.	C. D. Lawton, County Auditor.
Indiana	Bluffton	September 6	Constructing 21 gravel roads.	County Commissioners.
Ohio	Tontogany	September 7	Paving Main Street.	Village Clerk.
Indiana	Valparaiso	September 7	Constructing stone road in Westchester and Liberty twps.	Porter County Commissioners.
Ohio	Cleveland Hts.	September 10	Grading, draining and macadamizing.	Wm. G. Phare, Village Clerk.
Ohio	Cincinnati	September 11, noon	Grading, paving, etc., 5 sts.; cost, \$121,815.	C. N. Dannenhowe, City Eng'r.

Street Improvements—Continued.

New Jersey	Bridgeton	September 11, noon	Improving 5.75 miles Maiaga road, inc. 16,420 yds. earth exc. 9,232 yds. compact gravel, arch bridge, addition to bridge, culvert, 2½ x 30 feet.	George Reeves, Freeholders. Julius C. Dorn, County Clerk. A. B. Lea, Cleveland Co., Engr. C. N. Dannenhowe, City Engineer.
Ohio	Cleveland	September 11	Constructing pavement on Berea road.	
Ohio	Chagrin Falls	September 11	Repairing pavement of Bentleyville road.	
Ohio	Cincinnati	September 12, noon	Grading, paving, etc., portions of Palm ave.; cost, \$6,316.	
Iowa	Des Moines	September 13, 11 A.M.	Laying 1½-in. asphalt on 6-in. concrete and one-in. binder course, 1,084 sq. yds., 562.5 ft. cement curb, Library Ave.; also 1,360 ft. curb E. 2d St. and 2,311 yds. vit. brick on concrete, 2 alleys.	
Wisconsin	Madison	September 13, 2 P.M.	Grading and constructing limestone macadam pavement, etc.	W. W. Wise, Bd. Pub. Works. O. S. Norsman, City Clerk.
Ohio	Wauseon	September 13	Constructing grade on County line, German township.	J. E. Merrill, County Auditor.
South Carolina	Ft. Moultrie	September 14, 11 A.M.	Constructing roads and walk.	J. M. Fulton, O. M., U. S. A.
Minnesota	St. Paul	September 16	Improving portion of Larpeteur Avenue.	Edward G. Krahmer, Co. Auditor.
Ohio	Euclid	September 16	Furnishing and laying macadam, etc., Euclid road.	H. S. Dunlop, Village Clerk.
Indiana	Rockville	September 20, noon	Constructing stone pike, 1½ miles long.	W. B. La Bow, Veederburg, Surv.
Indiana	Lebanon	September 24	Constructing Ezra Good Gravel Road.	B. F. Simmons, County Auditor.

Water Supply

New York	Brooklyn	August 28, 2 P.M.	Furn. and laying mains in number of streets.	John H. O'Brien, Water Com'r.
Pennsylvania	Philadelphia	August 29, noon	Electric machinery for Torresdale pumping station (Contract No. 110), sand water washer pumps filter plant (Contract 110).	Geo. R. Stearns, Director Pub. Wks. Moses Herman, Park Board. W. V. O'Connor, City Auditor. Lt. J. A. Thomas, Constr. O. M. C. B. Palmer, Jr., Village Clerk. Julius Hulff, City Clerk.
New York	New York	August 29	Furnishing and laying c. i. water pipe, etc., Harlem River Drwy.	
North Dakota	Grand Forks	August 30, 4 P.M.	Laying water mains.	
Florida	Fort Dade	August 30, 7 P.M.	Constructing 150,000-gal. steel tank and trestle and ice plant.	
Nebraska	Bradshaw	August 30	Constructing water works.	
Nebraska	Norfolk	August 30	Furn. material and laying water main portion 7th St.	
Ohio	Columbus	August 30	Laying c. i. force mains in Franklin twp. and in city, Cont. No. 17 inc. 2,420 tons c. i. pipe, 11,000 lbs. castings, 26 gate valves, 3 to 36 in., 130 tons bell and spigot special castings, 4 tons flange castings, 7,520 lbs. twisted steel rods, 2,200 cu. yds. macadam, 2,520 lbs. manhole steps, etc.	Henry Maetzel, Ch. Engr., B. P. S.
Illinois	Chicago	August 31, 11 A.M.	Furn., etc., 800 one-inch meters; 500 1½-in., 500 1¼-in., 200 2-in., 50 3-in., 30 4-in., 20 16-in. meters.	John J. Hanberg, Com'r Pub. Wks. Paul Redieske, Dep. Com. Pub. Wks. A. S. Olson, City Recorder.
Illinois	Chicago	August 31, 11 A.M.	Constructing Lawrence Ave. pumping station.	
Minnesota	Montgomery	August 31, 7:30 P.M.	Laying 524 ft. 6-in. water main, hydrants, etc.	
Michigan	Grosse Pt. Farms	August 31, 8 P.M.	Furnishing and laying 2½ miles, 6, 8, 10-in. c. i. pipe, 33 hydrants, etc.	J. G. Armstrong, Village Clerk. W. C. Burke, City Engineer.
Oklahoma	Oklahoma City	August 31	Installing 50,000 gal. water-softening plant.	Loweth & Wolfe, St. Paul, Minn., Engineers.
North Dakota	Carrington	September 2, 2 P.M.	Constructing steel stand pipe and foundation for waterworks.	
Manitoba	Winnipeg	September 3, noon	Constructing general works and equipment for Hydro-Electric Works and Station at Point du Bois; transmission line to city and Receiving Transformer Station in Winnipeg.	M. Peterson, Sec'y Bd. of Control.
Missouri	Kansas City	September 3, 2 P.M.	Annual supply cast iron pipe, 4 to 16 ins., and 20 to 42 ins. diam.; 2,200 tons 48 in. diam., and about 50 tons special castings for 24 ins. and greater in diam.	Everett Elliott, Sec'y Bd. Pub. Wks. Wm. W. Northcott, Pur. Agt.
Brit. Columbia	Victoria	September 3	5,000 ft. 6-in. and 15,000 ft. 4-in. c. i. pipe.	
Louisiana	New Orleans	September 4, 3 P.M.	Hauling and laying 250 miles 4 to 30-in. c. i. water pipe, aggregating 26,000 tons.	Geo. G. Earl, Gen. Supt. S. & W. Bd. Geo. W. Salisbury, Water Com'r. Geo. Janin, Supt. Water Works. Bureau Yards and Docks, Navy Dept., Washington, D. C.
New York	Cazenovia	September 4	Supplying 5,400 ft. 4-in. c. i. pipe, 10 hydrants, 400 valves, etc.	
Quebec	Montreal	September 6	9-ft. concrete conduit, 27,300 feet.	
Florida	Pensacola	September 7, 11 A.M.	Constructing waterworks, inc. 100,000 gal. steel tank and tower.	
Kentucky	Louisville	September 8	Pumping engines, 16, 20, and 30 million gallons respectively, and four boilers.	B. Zorn, Pres. of Water Works Edmund T. Sykes, Minp'l's. Minn. En
Michigan	Stambaugh	September 9, 8 P.M.	Improving the water works.	Fred. T. Crane, City Engineer.
New Jersey	Orange	September 9	Constructing reservoir on old Friedman Farm; also 12, 20, and 24-in. water pipe and castings for pipe line.	
Iowa	Decorah	September 10	Bldg. automatic air-pressure steel tank or 500-bbl. overhead tank system, 60 ft. high at Poor Farm, Freeport.	I. Linnevold, County Auditor. V. A. Burley, Co. Auditor.
Ohio	Sibley	September 10	Open ditch, 10,300 cub. yds. excavation.	H. Q. Bell, Mayor.
Georgia	Millen	September 12	Constructing \$30,000 electric light and water plant.	Commanding Officer.
Virginia	Norfolk	September 14, 11 A.M.	Constructing steel tank and tower at Navy Yard.	J. F. Case, Chief Engineer.
Philippine Is'ds.	Manila	September 14, noon	Valves and sluice gates for use in gravity water supply.	

Sewerage

New York	Brooklyn	August 28, 11 A.M.	Constructing sewer in portion of Scott Avenue.	Bird S. Coler, Boro Pres.
New York	New York	August 29, 11 A.M.	Constructing sewers, etc., in various streets, Boro Queens.	Joseph Bermel, Boro Pres.
Minnesota	St. Paul	August 29, 2 P.M.	Constructing sewer in Cherokee Avenue.	R. L. Gorman, Clk. Bd. Pub. Wks.
Indiana	Evansville	August 30, 2 P.M.	Constructing Kentucky Ave. sewer, inc. 3,850 ft. 8-ft. rein. concrete sewer; 1,400 ft. 7-ft. 6-in.; 1,400 ft. 7-ft.; 1,220 ft. 6-ft. 6-in.; 680 ft. 6-ft.; 1,364 ft. 5-ft. 6-in.; also one egg-shaped brick sewer as above, manholes, etc.	Walter F. Wunderlich, Clk. Bd. Public Works. W. V. O'Connor, City Auditor. Lt. L. A. Thompson, Const. Q. M.
North Dakota	Grand Forks	August 30, 4 P.M.	Constructing lateral sewer.	W. H. McMillin, Clk. Bd. Pub. Ser.
Florida	Fort Dade	August 30, 7 P.M.	Constructing storm water drains.	Fred R. Charles, City Engineer.
Missouri	Collinsville	August 30	Constructing sewerage system.	
Ohio	Youngstown	August 30	Constructing sewers in portion of Falls Ave.	
Indiana	Richmond	August 30	Bldg. sewer system, 4 miles long, inc. disposal plant; cost, \$50,000.	
Nebraska	Norfolk	August 30	Furn. material and laying Dist. Sewer No. 1, main sewer in portion 1st St.; taking up and replacing main sewer pipes at mouth of main sewer where same enters Elkhorn River.	Julius Hulff, City Clerk. George E. Arnold, Engineer.
Ohio	Canal Dover	August 31	Combined sewer system, to cost \$18,337.	W. G. Kirchoffer, Madison, Eng'r.
Wisconsin	Elroy	August 31	6.643 ft. 6 to 18-inch pipe sewers.	L. H. Gebhart, Clk. Bd. Pub. Serv.
Ohio	Norwood	August 31	Constructing storm sewer in ravine east of Montgomery Pike.	
New Jersey	Riverside	September 2, 8 P.M.	Laying 10 miles, 8 to 24-in. sewers, pump house, engines, pumps, pump well and disposal works.	Wm. H. Boardman, Engineer. W. V. O'Connor, City Auditor. J. R. Dever, City Clerk.
North Dakota	Grand Rapids	September 2	Constructing lateral sewer.	Wm. H. Rights, City Engineer.
Washington	Olympia	September 2	Constructing 2,000 ft. storm sewer, etc., Main Street.	Ira W. Sylvester, City Engineer.
Indiana	Columbus	September 2	Constructing sewers in Fifth and Mechanic Avenues.	W. E. Sarver, City Engineer.
Louisiana	Alexandria	September 3, noon	Constructing 5 miles 8 to 14-in. vit. pipe sewer, etc.	Clyde J. Knisely, City Engineer.
Ohio	Canton	September 3, noon	Constructing sewers, to cost \$9,045.	
Ohio	New Philadelphia	September 3, noon	Laying 4,500 ft. 8-in. pipe sewer.	
Illinois	Joliet	September 3, 2 P.M.	Excavating 90,000 cu. yds. concrete, 10,000 yds. Spring Creek drain.	Geo. H. Munroe, Commissioner. Bd. Water Supply, N. Y. City.
New York	Kingston	September 3, 2 P.M.	Constructing portion of intercepting sewer.	Ernst Wicherski, City Clerk.
Minnesota	New Ulm	September 3, 5 P.M.	Constructing concrete sewer in Franklin Street.	Charles H. Van Auken, City Eng'r.
New York	Cohoes	September 3, 8 P.M.	Constructing sewer in Hart St., bet. Main and Congress Sts.	W. H. Rights, City Engineer.
Indiana	Columbus	September 3	Constructing 0.838 ft. of main and lateral sewers.	L. L. Crumrine, Sec'y Bd. Pub. Serv.
Ohio	Lima	September 3	Constructing 15-in. sewers 225 ft. long, Cherry alley.	Board Contract and Supply.
New York	Troy	September 3	Constructing sewers in Stannard Ave. and Park View Court.	
South Dakota	Webster	September 3	Constructing sewer system, all glaze pipe, or concrete sewer on all sizes 18-in. and over.	Carl Malmberg, City Auditor. Robert Caldwell, City Engineer.
Wisconsin	Beloit	September 4, 10 A.M.	Furnishing and laying 8,000 ft. vit. pipe, 4 sewer districts.	L. N. Wilson, City Engineer.
Tennessee	Johnson City	September 5, noon	Laying 4,200 ft. 8-in. vit. sewer, paving, curb, etc.	J. F. Irwin, Boro Engineer.
Pennsylvania	Monessen	September 5, 4 P.M.	Constructing 700 ft. 4 ft. 6 in. x 6 ft. 9 in. 3-rung brick sewer, etc.	C. M. Thorpe, City Engineer.
Montana	Bozeman	September 5	Constructing pipe sewers, to cost \$36,000.	
South Carolina	Sumter	September 5	Constructing sanitary sewer system; 14 miles, 18 to 22-in. pipe, etc.	Wm. H. Lyon, Consulting Engineer. J. O. Schultz, City Engineer.
Iowa	Iowa City	September 6	Construction of sewer in Bowery St.	F. R. Shepherd, City Auditor.
South Dakota	Bryant	September 9	Constructing drainage and sewerage system.	Robert Hooke, City Engineer.
Tennessee	Chattanooga	September 10	Constructing Chestnut St. sewer from Ninth St. to river.	
Louisiana	New Orleans	September 11, 3 P.M.	Constructing 110 miles 8 to 27-in. sewer, depth 5 to 17 ft., including 1,230 manholes and 443 flush tanks; 4 contracts.	F. S. Shields, Sec'y S. & W. Board.

Sewerage—Continued.

New Jersey	Hoboken	September 11, 8 P.M.	Cleaning and repairing sewer in Jackson St., bet. 4th and 5th.	J. H. Londrigan, City Clerk.
Iowa	Des Moines	September 13, 11 A.M.	Constructing 652 ft. 12-in. vit. pipe sewer, Capitol Ave.	W. W. Wise, Board Pub. Works.
Wisconsin	Lakemills	September 13, 7:30 P.M.	Constructing 1,887 ft. 6-in.; 1,887 ft. 8-in.; 1,225 ft. 10-in.; 823 ft. 12-in.; 1,513 ft. 15-in.; 75-ft. 18-in.; 2,367 ft. 24-in. vit. pipe sewer, etc.	W. G. Kirchoffer, Madison, Eng'r.
Ohio	Canton	September 16	Constructing sanitary sewer, N. Cleveland Ave., inc. 2,500 ft. 5-in., 385 ft. 6-in. vit. pipe; 1,600 ft. house con. 11 manholes, etc.	B. F. Faust, Clk. Bd. Pub. Serv.

Public Buildings

New York	New York	August 28, 10:30 A.M.	Erecting fire house in Bronx; also one in Brooklyn.	Hugh Bonner, Dept. Fire Comr.
North Dakota	Wahpeton	August 29, 2 P.M.	Three brick buildings.	Commissioner of Indian Affairs Washington, D. C.
New York	New York	August 29	Erecting Addition F, Met. Museum of Art.	McKim, Mead & White, Archs.
Ohio	Akron	August 29	Erecting school on Portage Path.	Harpster & Bliss, Archs.
Quebec	Sherbrooke	August 29	Constructing a drill hall.	Fred Gelmas, Ottawa, Sec'y D. P. W.
Utah	Price	August 29	Erecting new Carbon County Court House.	H. C. Smith, Town Clerk.
New York	Brooklyn	August 29	Erecting 4 shelter and tennis houses in 4 parks.	Moses Herrman Park Dept.
New York	Olean	August 30	Erecting \$35,000 school at East Olean.	M. M. Holne, Clk. Bd. Educ.
Minnesota	Svea	August 30	Erecting a brick school.	Wm. Elliot & Son, St. Paul, Arch.
Nebraska	Omaha	August 31	Erecting tuberculosis ward at County Hospital.	Thos. R. Kimball, Architect.
North Dakota	New England	August 31	Erecting eight schools.	S. Harrison, Clk. Bd. Educ.
Connecticut	Storrs	August 31	Horticultural Hall and greenhouses Com. Agr.; cost, \$50,000.	The Mayor.
Indiana	Williamsport	August 31	Bldg. new jail, jailer's residence and heating plant for jail and Court House, estimated cost, \$18,000.	R. L. Winks, County Auditor.
Indiana	Ligonier	September 2	Erecting a library.	Mrs. Jacob Streets, Chm. Lib. Bd.
Ohio	Columbus Grove	September 2	Erecting 2-story brick and stone school, Sugar Creek twp.	L. E. Lee, Clk. Bd. Educ.
New York	Buffalo	September 3, 10 A.M.	Bldg. addition and making alterations at Erie Co. jail.	Henry P. Pink, Clk. Supervisors.
Wisconsin	Beloit	September 3, noon	Erecting high school; all branches of work.	J. C. Llewellyn, Chicago, Ill., Arch.
Dist. of Col'bia	Washington	September 3, noon	Construction of two double sets of non-commissioned officers' quarters at Washington Barracks.	Major W. C. Langfitt, Corps Engrs., U. S. A.
Indiana	Bloomfield	Septen.oer 3, 2 P.M.	Erecting cell house and cell work, Green Co. Jail.	J. W. Gaddis, Vincennes, Arch.
Iowa	Cedar Rapids	September 3, 3 P.M.	Building extension, remodeling, etc. Federal Building.	James Knox Taylor, Wash., D. C.
New York	Watertown	September 3, 3 P.M.	Constructing complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Pennsylvania	Harrisburg	September 3	Erecting \$35,000 school building.	Andrew S. Patterson, Chm. School Board.
Ohio	Cleveland	September 3	Building annex to Milford School.	Board of Education.
South Carolina	St. George	September 3	Erecting brick school, Special School Dist. No. 5.	C. Gadsen Sayre, Architect.
New York	New York	September 3	Additions, alterations, etc., various school buildings.	C. B. J. Snyder, Supt. Sch. Bldgs.
Wisconsin	Chippewa Falls	September 4, 2 P.M.	Erecting 3 dormitory buildings Wis. Home for Feeble Minded.	Ferry & Clas, Milwaukee, Archs.
New York	Brooklyn	September 4, 2:30 P.M.	Erecting Pathological Bldg. Kings County Hospital.	Robt. W. Hebbard, Comr. Charities.
Massachusetts	Quincy	September 4	Constructing complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
New York	Plandreau	September 4, 3 P.M.	Erecting brick industrial bldg., complete, Indian School.	Chas. S. Pierce, Superintendent.
South Dakota	Willard	September 4	Erecting, heating, etc., tuberculosis pav., Willard State Hosp.	T. E. McGarr, Capitol, Albany.
New York	Evansville	September 4, 10 A.M.	Erection of stable and wash-house for County Orphan Asylum.	Commissioners of Vanderbilt Co.
Indiana	Columbia	September 5	Additions, alterations and roofing the Court House.	Strand & La Faye, Architects.
South Carolina	Newcastle	September 5	Erecting two cottages, Ind. Village for Epileptics.	W. S. Kantman & Sons, Richmond, Architects.
Kansas	Liberal	September 6	Erecting 2-story 64x64 brick Court House; cost, \$13,000.	J. M. Smith, Hutchinson, Arch.
Ohio	Cleveland	September 9, noon	Completing annex to Harvard School.	Charles Orr, Director of Schools.
North Dakota	Roulette	September 9	Erecting brick school, Leonard School Dist. No. 9.	Theo. A. Thorsen, Clk. School Bd.
Indiana	Syracuse	September 10	Erecting a school building.	Griffith & Fair, Ft. Wayne, Archts.
Georgia	Forsyth	September 10	Heating the County Court House.	J. S. Jossey, Chm. Bd. Commissioners.
North Dakota	Kenmore	September 10	Heating and plumbing for new high school.	Frost & Hosmer, Minot, Architects.
California	Eureka	September 11, 10 A.M.	Erecting County Jail with either brick walls and wood floors or concrete throughout; also cell and grating work.	Geo. Cussins, Clk. Co. Supervisors.
New York	Hudson	September 14, 1 P.M.	Erecting complete, 3 cottages, etc., to Industrial Building.	G. L. Heins, Albany State Arch.
New York	Buffalo	September 16, 3 P.M.	Constructing (except elevators) U. S. Marine Hospital.	James Knox Taylor, Superv. Arch., Washington, D. C.
Pennsylvania	Pittsburg	September 16	Constructing (except elevators) U. S. Marine Hospital.	James Knox Taylor, Wash., D. C.
Ohio	Youngstown	September 16	Erecting addition to Children's Home.	W. B. Jones, County Auditor.
California	San Francisco	September 17, 3 P.M.	Repairs, alterations, etc., U. S. Mint Building.	James Knox Taylor, Wash., D. C.
Kansas	Lawrence	September 17	Erecting Eng. Bldg.; also furn., etc., Univ. Kansas.	Regents, Univ. of Kansas.
Iowa	Muscatine	September 18, 3 P.M.	Construction U. S. Post-office.	James Knox Taylor, Superv. Arch.
Ohio	Hamilton	September 24, 3 P.M.	Constructing complete, U. S. Post Office Building.	James Knox Taylor, Wash., D. C.
Iowa	Hamilton	September 26	Furn. material and erecting complete, fireproof Court House.	Jos. E. Mills, Detroit, Mich., Arch.
Alabama	Selma	September 30, 3 P.M.	Erecting, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
North Dakota	La Moure	October 3, 10 A.M.	Plans and specifications for Court House, \$60,000 to \$100,000.	E. W. Field, County Auditor.
Wisconsin	De Pere	October 5	Plans for 3-story and basement Court House and 2-story basement jail, fireproof, complete; cost, \$300,000.	Special Bldg. Com. County Board

Bridges

Pennsylvania	Towanda	August 29	Erecting 46-ft. plate girder br., 24-ft. roadway; also truss span; 86 ft. center to center, 14-ft. r'dw'y or concrete arch bridge.	E. D. Harkness, Chm. Co. Com'rs.
Wisconsin	Racine	August 31, 10 A.M.	Erecting stationary bridge, retaining walls, approach, etc.	P. H. Connolly, City Engineer.
Ohio	Lima	August 31, noon	Building Adgate and Morgan steel bridges; also concrete abut.	Allen County Commissioners.
Massachusetts	Greenfield	August 31	Erecting rein. concrete highway bridge, 25-ft. span, 20-ft. roadway over Hinsdale brook; cost, \$1,400.	Clapp & Abercrombie, Engineers.
Idaho	Sandpoint	September 2, 10 A.M.	Constructing bridge across Pach River.	Ignatz Weil, County Clerk.
Indiana	Danville	September 2, 10 A.M.	Constructing Hazelton-Hadley bridge in Guildford twp.	County Commissioners.
Indiana	Goshen	September 2, noon	Constructing 13, repairing 2 bridges, and abutments, steel concrete arch, and abutments.	O. H. Sweitzer, County Auditor.
Ohio	Chillicothe	September 2, noon	Erecting concrete arch bridge on piles, etc., over Dry Run.	Charles H. Pinto, Auditor.
Ohio	St. Clairsville	September 2, 1 P.M.	Erecting 6 steel superstructures, 48½ ft.; 47½ ft.; 10½ ft.; 22½ ft., all 14-ft. roadways, 22½ ft. span, 16-ft. roadway; 35-ft. span, 13-ft. roadway; also substructures; also concrete and stone-concrete culverts, 10 ft. each, and repairing substructure, Majors bridge, Pease twp.	A. W. Beatty, County Auditor.
Ohio	Jefferson	September 2, 1 P.M.	Constructing a reinforced concrete bridge in Harts Grove Twp.	P. C. Renner, County Auditor.
Minnesota	Minnehaha	September 2, 5 P.M.	Erecting bridge over Creek at Soldiers' Home.	S. H. Towler, 123 Nioblet Ave., Minneapolis.
North Carolina	Tarboro	September 2	Erecting steel bridge over Tar River; 200 ft. long; 18 ft. wide; 60 ft. draw.	J. W. B. Battle, Chm. Co. Com'rs.
Ohio	Trenton	September 2	Erecting 72-ft. steel bridge, 12 ft. concrete floor \$2,100.	County Com'rs, New Philadelphia.
Oklahoma	Chandler	September 2	Furn. and erecting four steel bridges in County.	J. E. Red, County Clerk.
Ohio	Ashtabula	September 2	Constructing rein. concrete bridge on State Road.	P. C. Remick, County Clerk.
California	Ingot	September 3, 10 A.M.	Constructing stringer and truss bridge over Cow Creek.	S. N. Witherow, Clk. Supervisors.
California	Santa Barbara	September 3, 10 A.M.	Erecting bridge over Santa Ynez River at Dyer Crossing; also one over San Jose Creek at Hollister Ave.	C. A. Hunt, County Clerk.
California	San Jose	September 3, 11 A.M.	Erecting concrete bridge over Wildcat Creek, Fruitvale Ave.	Henry A. Pfister, County Clerk.
North Dakota	Fargo	September 3, noon	Erecting 120-ft. and 40-ft. bridge.	Arthur G. Lewis, Co. Auditor.
Colorado	Sedalia	September 3, noon	Erecting 100-ft. rein. concrete bridge over Plum Creek.	T. W. Jaycox, Denver, State Eng'r.
Ohio	Port Clinton	September 3, 1 P.M.	Erecting 73-ft. span, 16-ft. roadway; also substructure.	Henry Pafenbach, County Auditor.
Kentucky	Catlettsburg	September 3, 2 P.M.	Constructing service bridge at Lock No. 1, Big Sandy River.	Maj. J. G. Warren, Eng's Corps.
California	Farmington	September 3	Constructing 7-span steel bridge over Oregon Slough.	E. D. Graham, Stockton, Clk. Superv.
Missouri	Albany	September 3	Erecting 180-ft. steel bridge on old piers, 162-ft. span on tubes, 80-ft. approach, two 20-ft. I-beams, one 24-ft. I-beam; all steel.	W. A. Henton, County Surveyor.
Mississippi	Natchez	September 3	Erecting two modern steel bridges.	James S. Fleming, President.
New York	Elmira	September 4, 11 A.M.	Erecting two bridges over Newtown Creek.	S. A. Warner, City Clerk.
Mississippi	Vicksburg	September 4, noon	Erecting concrete steel bridge on Cemetery Road, and concrete arch bridge over Glass Bayou at Cherry St.	J. D. Laughlin, Chancery Clerk.
Manitoba	Winnipeg	September 4, noon	Constructing wooden Howe truss bridge, of ten spans of 80 ft. each, and one draw span of 160 ft.	Magnus Peterson, Sec'y Bd. Control.

Bridges—Continued.

Missouri.....	Warrensburg.....	September 4, 2 P.M.	Constructing steel bridge.....	David Mohler, Rd. and Br. Com'r.
Montana.....	Glasgow.....	September 4, 2 P.M.	Erecting 150-ft. span, combination tubular pier bridge, 16-ft. roadway, 80-ft. approach at one end.....	W. B. Shoemaker, County Clerk.
New Jersey.....	Rahway.....	September 4, 3 P.M.	Erecting rein. concrete bridge 46 ft. wide, 60-ft. span over river.....	J. L. Bauer, Elizabeth, County Eng'r.
Ohio.....	Columbus.....	September 4.....	Bridge superstructure Franklin Twp.; concrete work Pleasant Twp.....	County Commissioners.
Ohio.....	Eaton.....	September 5, noon.....	Constructing superstructures of various bridges.....	Fred. C. Roberts, Engineer.
New York.....	New York.....	September 5.....	Bldg. steel and masonry approach, Blkwl's Island br., Boro Q's.....	J. W. Stevenson, Com'r Bridges.
New Jersey.....	Laurel Springs.....	September 9, 11 A.M.	Building iron truss bridge, 64 ft. long, over Laurel Lake.....	J. J. Albertson, County Engineer.
Kansas.....	Wichita.....	September 9, noon.....	Constructing rein. concrete bridge over river at Douglas Ave.....	George H. Bradford, Engineer.
Louisiana.....	Plaquemine.....	September 9, noon.....	Constructing approaches and steel drawbridge over Bayou Plaquemine.....	Jules A. Herbers, Clerk Police Jury.
California.....	Yosemite.....	September 10, noon.....	Erecting steel bridge over Merced River in Yosemite Valley.....	Maj. H. Benson, U. S. A., Act Supt.
Ohio.....	Lorain.....	September 13, 1 P.M.	Erecting steel bridge, concrete floor; also stone abutments for two bridges.....	L. A. Fauver, County Surveyor.
Ohio.....	Cleveland.....	September 14, 11 A.M.	Constructing concrete steel bridge in Strongsville twp.....	Julius C. Dorn, County Clerk.
California.....	Adin.....	September 16, 10 A.M.	Constructing bridge over Ash Creek at Main Street.....	L. S. Smith, Clerk, Supervisors.
California.....	Madera.....	September 16, 10 A.M.	Constructing bridge across Horace Gold Creek.....	County Supervisors.
Chile, So. A.....	Santiago.....	September 30.....	Erecting several bridges in Chile.....	Wessel, Duval & Co., N. Y. City.
Manitoba.....	Dunrea.....	October 15, noon.....	Constructing steel bridge, two 100-ft. spans, on concrete and boulder masonry foundation over Souris River.....	J. H. Putnam, Mun. Riverside.
China.....	Canton.....	October 19.....	Constructing steel cantilever and girder bridge, 1,102 ft. long, in Front Reach, 740 ft. west of Dutch-folly Fort.....	Canton River Bridge Co., Ltd.

Lighting and Electricity

New Jersey.....	Paulsboro.....	August 29, 7 P.M.	Installation of gas plant for Borough.....	Wm. H. Boardman, Phila., Pa., Eng.
New Jersey.....	Secaucus.....	August 29.....	Dismantling, moving forward, resetting and repairing 4 boilers; installing separator, valves, resetting steam pipes, etc.....	John Sweeney, Jersey City, Clk. Com.
New York.....	Little Valley.....	August 30.....	Improving electric light plant; cost, \$30,000.....	G. S. Boller, Engineer.
Massachusetts.....	Boston.....	August 30.....	Electric system in ext. Mechanic Arts High School.....	French & Hubbard, Engrs.
Pennsylvania.....	Lebanon.....	August 31, noon.....	Lighting streets with 150 2,000 c.p.; also 150 incandescent 24 c.p. lights, for 5 yrs. every night, and all night.....	Geo. D. Krause, Chm. Police Com.
Washington.....	Puget Sound.....	September 3, 10 A.M.	Furnishing incandescent lamps, electric fittings, etc.....	Commanding Officer, Navy Yard.
Illinois.....	Chicago.....	September 3, 11 A.M.	Furn. 2,500 a. c. arc lamps, 10 single phase, 60 cycle transformers, 50 inductive regulators.....	Wm. Carroll, City Electrician.
Ohio.....	Hamilton.....	September 3, noon.....	Purchase of 3 Corliss engines, generators, exciters, arc machines, switch board, line shaft and pulleys, now at work, purchaser to remove same when new machinery is installed.....	A. Rothwell, Sec'y Bd. Pub. Serv.
Michigan.....	L'Anse.....	September 3 P.M.	Constructing hydraulic power plant.....	E. P. Burch, Minneapolis, Minn., C.E.
Maine.....	Portland.....	September 3.....	Engine, generator and electric wiring for County Building.....	Geo. Burnham, Architect.
New York.....	Brooklyn.....	September 4.....	Furnishing 15-motor-generator sets, etc., navy yard; cost, \$72,000.....	Commanding Officer.
Ontario.....	Campbellford.....	September 5.....	Rock cutting, concrete work, turbine wheels, generators, etc., for 4,000 h.p. and 2½ miles transmission line for power development.....	John S. Fielding, Toronto, Can., Engr.
Brit. Columbia.....	Revelstoke.....	September 9, 6 P.M.	Additional equipment and rearranging city hydro-electric plant, inc. 500 b. h. p. producer gas plant and gas engines, generators and exciters, transmission machinery, switch boards, etc.....	Cecil Goddard, Winnipeg, Ch. Eng'r.
Georgia.....	Millen.....	September 12.....	Constructing \$30,000 electric light and water plant.....	J. B. McCrary & Co., Atlanta, Eng'rs.
New York.....	New York.....	September 14, 11 A.M.	Motor generator sets and accessories for navy yard.....	Commanding Officer.
Ohio.....	Milton.....	September 16.....	Lighting village with 30 arcs, and few incandescent clusters, and franchise for commercial lighting.....	John Coate, Village Clerk.
Ohio.....	Columbus.....	September 17.....	Furnishing and installing, complete, at power house, Columbus State Hospital, engine, dynamo and switch board.....	Frank L. Packard, Architect.
India.....	Calcutta.....	December 31.....	Lighting town by electricity, gas, oil, or other method; now lighted by 9,300 gas lamps of 24 c.p. and 2,400 c.p. oil lamps.....	Municipal Council.

Miscellaneous

New York.....	New York.....	August 29, 2 P.M.	Furn. hardware supplies and steel to Harlem River bridges during year 1907.....	John H. Little, Act. Com'r Bridges.
Ohio.....	St. Bernard.....	August 29.....	Furnishing 1,500 ft. double-jacket cotton, rubber-lined hose with couplings.....	Geo. Schroeder, Clerk.
New York.....	Port Wood.....	August 30, 10:30 A.M.	Foundation, painting and erecting 100-ft. iron flagstaff.....	G. C. Burnell, Q. M., N. Y. Harbor.
Georgia.....	Columbus.....	August 30.....	First-class dark-blue uniforms, 38 reg. caps, Fire Dept.....	W. C. Lawrence, Chm. Com.
Illinois.....	Joliet.....	September 3.....	Constructing channels and building concrete walls in Mill Creek Drain. Dist., inc. 90,000 cu. yds. exc. 10,000 cu. ft. conc. walls.	Adolphus Younker, Commissioner.
New York.....	Troy.....	September 3.....	Placing fire escapes on public schools Nos. 12 and 14.....	Bd. Contract and Supply.
Maryland.....	Baltimore.....	September 4, 11 A.M.	Removal and final disposition of garbage, dead animals and market refuse for 10 years, from Jan. 1, 1908.....	J. L. Wickes, Com'r St. Cleaning.
New York.....	Buffalo.....	September 5, 11 A.M.	Pile pier on south line of Jersey Street.....	F. G. Ward, Com'r Pub. Wks.
Wisconsin.....	River Falls.....	September 5.....	Furn. 500 to 1,000 ft. 2½-in. rubber-lined cotton fire hose.....	Allen P. Weld, City Clerk.
Dist. of Col'bia.....	Washington.....	September 7, 11 A.M.	Dredging 20,000 cu. yds. from channel at navy yard.....	R. C. Hollyday, Navy Dept.
Ohio.....	Cleveland.....	September 10.....	Extension of east and west breakwaters, Fairport Harbor.....	C. McD. Townsend, U. S. Engrs.
New Jersey.....	Hoboken.....	September 11, 8 P.M.	Removal of ashes, garbage, rubbish, str. sweepings, etc., 1 year.....	James H. Londrigan, City Clerk.
Ohio.....	Cincinnati.....	September 11.....	Building dyke and shore protection, Ohio River, nr. Grain Ch., Ill.	Col. W. T. Russell, Eng'r Corps.
Indiana.....	Ft. Benj. Harrison.....	September 13, 10 A.M.	Erecting 2 garbage crematories.....	Geo. H. Penrose, Q. M., U. S. Army.
California.....	Stockton.....	September 16.....	Bldg. concrete bulkhead north side channel; cost, \$10,000.....	R. C. Tumulty, City Engineer.

STREET IMPROVEMENTS

Duquoin, Ill.—The city offers for sale \$55,000 5 per cent. street improvement bonds.—Address City Clerk.

Boonville, Ind.—Bids will be received, September 2, for \$26,417.08 gravel road bonds.—Jacob Lutz, Treasurer, Warwick County.

Ft. Wayne, Ind.—The resolution for cement walks on the east side of Parr street, from Berry to Superior, has been confirmed with the understanding that the work is to be done next spring; other resolutions were confirmed as follows: Cement walks on the south side of Nuttman street, from Beaver to Broadway; sewer in the alley south of Superior street; sewer on Barthold street; sewer on Spring street. Resolutions were adopted for cement walks on the east side of Greenwood avenue, from the alley south of Main street to the alley south of Illinois; cement walks on the west side of Beaver avenue, from Home to Packard, and paving with brick Knitters avenue, from Main street to lot 18, Lumbard's Park addition.

Iola, Kan.—Council is arranging to pave seven blocks with brick on concrete foundation.

Covington, Ky.—Colonel Brent, of the Louisville & Nashville Railway, and the delegation of citizens from the South End, appeared before the Committee on Railroads and Bridges in reference to a viaduct over the L. & N. tracks at Twentieth street; the railway has petitioned for right of way for a viaduct at Twentieth street and to close Willow street.

Springfield, Mass.—Petitions are being considered for improving a number of streets by macadamizing, laying sidewalks, curb, etc.—William E. Sanderson, Mayor.

Taunton, Mass.—The Board of Aldermen has appropriated \$4,000 for Bay street improvements.

Grand Rapids, Mich.—Council will advertise for bids for the purchase of street improvement and sewer bonds.—Address City Clerk.

Billings, Mont.—Plans are being prepared for two contracts of paving, one to cost \$103,000 and the other for \$20,000.—Henry Gerharz, City Engineer.

Butte, Mont.—Council is arranging to pave certain portions of Arizona street.

Elizabeth, N. J.—Ordinances have passed Council to pave Chilton street from Rahway avenue to Murray street, Jaques street from East Jersey to East Grant street, to establish a grade for Union avenue, from Prince street to the city line; to place a sidewalk on De Hart place, from Murray to Devine street, and to change the curb line of Stiles street from Chilton to Magie.

Rochester, N. Y.—Ordinances are being prepared for paving certain portions of Webster avenue.—Address City Clerk.

Carrollton, O.—Bids will be received, September 10, for \$7,000 village paving bonds.—S. O. Morrow, Village Clerk.

Ironton, O.—The Clerk has been instructed to advertise for bids for cement curb and gutter on Fourth street.

Pioneer, O.—Bids will be received, August 30, for \$3,500 5 per cent. bonds for repairing highways and bridges.—Maurice Rowland, Corporation Clerk.

Reading, O.—Bids will be received, September 19, for \$8,200 5 per cent. semi-annual Vine street improvement bonds.—Village Clerk.

Silverton, O.—Bids will be received, September 11, for \$7,600 4½ per cent. semi-annual sidewalk bonds.—A. A. Sprague, Village Clerk.

Struthers, O.—Bids will be received, September 15, for \$5,000 6 per cent. 10-year resurfacing bonds.—L. S. Creed, City Clerk.

Wapakoneta, O.—The Clerk has been instructed to advertise for bids for repairing sidewalks in this town.

Youngstown, O.—Bids will be received, September 16, for \$13,200 bonds for paving Willis and Williamson avenues.—Wm. J. Davies, City Auditor.

Zanesville, O.—Bids will be received, September 2, for the purchase of \$11,500 5 per cent. street improvement bonds.—H. H. Kennedy, City Auditor.

Glassport, Pa.—Borough Council has passed a number of ordinances relating to grading, paving, sewer extension, etc.

Austin, Tex.—The property owners of Third street have petitioned for paving streets.

Beaumont, Tex.—The Attorney General has decided that no election will be required to give Jefferson County authority to issue \$300,000 road improvements bonds; \$100,000 of these bonds will be offered for sale at once.

Newport News, Va.—The Finance Committee of Council has been authorized to sell \$100,000 street improvement bonds.—Address City Clerk.

SEWERAGE

Birmingham, Ala.—Council has passed ordinance No. 408 for constructing sanitary sewer, estimated cost \$2,000.—J. C. Murray, City Clerk.

Mobile, Ala.—Bids will soon be invited for constructing 12 to 36-inch stone sewers, to cost \$53,000.—Wright Smith, Chief Engineer, Board of Public Works.

Paragould, Ark.—A sewer system, to cost \$200,000, will probably be constructed.

Truckee, Cal.—Bids will be received, September 3, for the purchase of \$16,000 5 per cent. sewerage bonds.—F. M. Rutherford, Secretary of the Board.

Alamosa, Col.—Plans are being prepared for a sewer system by B. D. Critchlow.

Clifton, Ga.—A new sewerage system, to cost \$15,000, is to be constructed.

Lodi, Ida.—A sewer system will probably be constructed.

Mullan, Ida.—The construction of a sewer system is being considered.

Herrin, Ill.—A sewerage system, to cost \$200,000, is to be constructed on plans prepared by Engineer W. T. Pierce.—Fred E. Roland, City Clerk.

Minooka, Ill.—A sewer system to cost \$25,000 will probably be constructed.—Wm. Meyer, Engineer; C. R. Denson, City Clerk.

Clear Lake, Ia.—The construction of a sewer system is being considered.

New Bedford, Mass.—The Committee on Roads, Bridges and Sewers recommends the construction of a \$1,700 sewer in James street; sewers in Wood and Corell streets, under the separate system suggested by City Engineer Williams, at an estimated cost of \$50,000; also the construction of an independent sewer for the Acushnet School.

Springfield, Mass.—The Town Board is arranging to expend \$25,000 for sewer purposes.

Sewer extensions will be built in Carew and Armory streets this year; \$15,000 bonds will be issued for the purpose.—William E. Sanderson, Mayor.

Howell, Mich.—The Trustees of the State Sanatorium for Tuberculosis will build a sewage disposal plant, the contractors being Charles G. Jewett, of Howell; Burton J. Ashley, 6515 Normal avenue, Chicago, Ill., Engineer.

Marquette, Mich.—The Lake Shore Engine Works has petitioned Council for the extension of sewer plant.

Saginaw, Mich.—The Board of Estimates has authorized an issue of \$20,000 sewer bonds and \$25,000 school bonds.—Address City Clerk.

Cape Girardeau, Mo.—No bids were received, August 19, for the construction of twelve miles of 8 to 24-inch pipe sewers in Sewer District No. 1.—C. C. Hawley, City Engineer.

Joplin, Mo.—The issue of \$47,000 bonds for sanitary sewer extensions and a similar amount for storm sewers is being considered.—N. B. Spillman, City Engineer.

Billings, Mont.—Plans are being prepared for constructing seven sewers of 12 to 21-inch pipe and 3,500 feet of 5x8 ft. concrete culvert, to cost \$87,000.—Henry Gerharz, City Engineer.

Elizabeth, N. J.—Ordinances have passed Council to construct sewers in Grove street, from Rosehill place to New York avenue; Sheridan avenue, from North avenue to Alma street; Jersey avenue, near Grove street; Williamson street, from South to Grove street, and in Cameron place, through Pearl street to South street.

Syracuse, N. Y.—Bids will soon be advertised for the construction of the Twenty-first Ward sewer.—E. A. Harper, City Engineer.

Cambridge, O.—The contract for sewerage North Eighth street, Taylor avenue, Ninth street, Dewey street, Clay avenue and Long street was awarded to Adams Brothers, of Zanesville.

Dayton, O.—The City Engineer has submitted the following estimates: a stone sewer in alley east of Fritz avenue, \$495; on Chicago avenue, \$950, and for improving the alley south of Norwood avenue, from Mount to Bank streets.

Defiance, O.—The Board of Public Service has awarded the Wabash avenue sewer contract to Geo. P. Wahn and Peter Weigand for \$1,208.03 and \$1,134.

Delaware, O.—An appropriation of \$10,000 will be asked to pay for the enlargement of the sewage disposal plant; plans have been drawn and approved; City Engineer Dike has the matter in charge.

Fremont, O.—Bids will be received, September 6, for \$893 4/4 per cent. Grant street sewer bonds.—Address City Auditor.

Paulding, O.—Council has decided to sewer Jackson street.

Springfield, O.—Bids will be received, September 10, for \$24,041.80 5 per cent. semi-annual sewer bonds.—S. M. Harris, City Auditor.

Youngstown, O.—The Board of Public Service has decided to construct a sewer from Walnut street to the bridge, and to build

it before the brick paving is laid; plans are being prepared for sewer on Mt. Pleasant street.—F. M. Lillie, City Engineer.

Stillwater, Okla.—Council has directed the City Engineer to prepare plans and estimates for the proposed new sewer system.—Address City Clerk.

Harrisburg, Pa.—The City Engineer is preparing plans for the extension of the sewers at Muench, Market and Mulberry streets, 24 feet further into the river, to cost \$1,500; also sewer in Walnut street, between Second and Third streets.

Pittsburg, Pa.—The Finance Committee of Allegheny Council has approved the ordinance for the construction of a sewage disposal plant at the City Poor Farm at Claremont, to cost \$10,000.

Columbia, S. C.—Bids are being received for constructing 3,750 feet of 8-inch sewers, 16 manholes and 2 flush tanks.—E. N. Chisolm, Jr., City Engineer.

Brownsville, Tex.—The establishment of a sewer system is under consideration.

Wichita Falls, Tex.—An election will be held, September 9, to vote on issue of \$20,000 sewer bonds.

Norfolk, Va.—Council has adopted ordinance prohibiting the further construction of cesspools in the city and the running of bathtubs and sink water into the cesspools now in use.

Eau Claire, Wis.—Sewers will be constructed in Grand avenue, East and Chestnut and Babcock streets; the City Engineer is preparing estimates, etc.—W. H. Frawley, Mayor.

Milwaukee, Wis.—The Board of Public Works is preparing to extend the sewerage system in the west district.—Charles J. Poetsch, City Engineer.

Racine, Wis.—Bids for the construction of a sewer and the installation of water service in Wisconsin street have all been rejected, and new bids will be advertised for.

WATER SUPPLY

Gadsden, Ala.—The Gadsden Waterwork Co. will sell its entire plant at auction on September 2.

Van Buren, Ark.—The plant of the Van Buren Water Company has been purchased by J. R. Powers, of this city, for \$100,000; the franchise has 35 years more to run.

Canon City, Col.—An ordinance is before Council authorizing an issue of \$400,000 water works bonds.—Address City Clerk.

Lamar, Col.—Bids will be received, September 2, for the purchase of \$150,000 5 per cent. 5-15-year optional water bonds.

East Hartford, Conn.—Four-inch main and hydrant will be placed in Bigelow street.

Wilmington, Del.—Bids will be advertised for filtration plant.

Albany, Ga.—The citizens will vote, September 23, on \$75,000 bond issue for extension of water mains and sanitary sewerage into newly annexed territory, municipal building, etc.—Address Mayor Rawson.

Atlanta, Ga.—City Engineer Clayton estimates that there are about 125,000 cubic yards of material to be removed preparatory to the construction of new reservoir, and that this work can be done by the County convicts at a labor cost of about \$50,000; about \$25,000 additional will be necessary in laying pipes and making improvements.

Millen, Ga.—An election will be held to vote \$30,000 water and light bonds.

Decatur, Ill.—Bids will be received for the construction of a \$28,000 pumping station, according to plans and specifications.—Albert Leach, City Clerk.

Middletown, Ill.—The City Council contemplates constructing water works system.

Cedar Rapids, Ia.—Estimates for extension to system amount to \$123,676.—Supt. C. J. Fox.

Moorhead, Ia.—About \$3,800 will be expended on water works system.

Paulina, Ia.—Council is planning to issue \$10,000 bonds for rebuilding water system.—Address City Clerk.

Wesley, Ia.—The citizens voted to construct water works.—Oscar Nelson is Mayor.

Hutchinson, Kan.—An ordinance has been passed to extend mains on various streets.

Merriam, Kan.—Engineers Burns & McDonnell, Kansas City, Mo., have prepared plans for water system; estimated cost, \$33,000.

North Topeka, Kan.—Water mains will be extended on several streets; six and four-inch pipe will be used.

North Adams, Mass.—A reservoir is proposed.

Escanaba, Mich.—The Escanaba water plant owned by a company of Scranton capitalists is preparing to build a modern filter plant in connection with their pumping station.—Geo. L. Weaver, President.

Allegan, Mich.—Extension of main has been ordered on Marshall street to the Fenrich property.

Escanaba, Mich.—The Water Company will build a filter plant of 6,000,000 gallons daily capacity.

Wyandotte, Mich.—The Wyandotte Board of Works proposes to secure the advice of a competent engineer relative to the installation of a filtration system at the city water works; Council will be asked for \$500 for the purpose.

Brookfield, Mo.—\$12,000 water bonds will be issued.

Concordia, Mo.—The citizens have voted bonds for pumping station.

Lincoln, Neb.—Council has ordered mains to be laid on various streets.

Orange, N. J.—Council has approved plans for the proposed reservoir on the old Freeman Farm, pipe line and castings; bids will be received for 12-inch, 20-inch and 27-inch water pipe and castings.

Cortland, N. Y.—The legislature has authorized the acquisition of the property of the Cortland Water Works Co.—Grove T. Maxon, Mayor.

Jamestown, N. Y.—The Superintendent has been instructed to purchase the Ludlow balance valve hydrants, four with steamer nozzle attached, estimated cost, \$303.50; also two 12-inch Darlington valves and five 10-inch Darlington valves, estimated cost, \$384.50; also one 12-inch check valve, one 12-inch hydraulic valve and one 16-inch hydraulic valve; cost, \$396.75, for use on new water mains in East Jamestown.—Clement B. Jones, Secretary, Water Commission.

Lockport, N. Y.—City Treasurer Hutchison has been directed to sell \$60,000 worth of 5 per cent. water supply bonds for the completion of the system from Niagara river, and constructing distributing main from Summit to Cottage street.

Old Forge, N. Y.—A water works system, including standpipe, will be constructed.—Francis K. Baxter, Utica, Engineer.

Rome, N. Y.—The city officials are arranging to secure a new supply of water for a gravity system.—Dr. W. W. P. Kingsley, Chairman, Board of Water Works.

Rush, N. Y.—Additional water supply has been authorized at the State Agricultural and Industrial School; cost, \$5,000.

Syracuse, N. Y.—The city will improve the conditions at Skaneateles Lake; a septic tank will be constructed, and the farmyard regraded.—Frank M. Westcott, Commissioner of Public Safety.

Ticonderoga, N. Y.—Plans for a water supply from Lake George are being made.—Charles E. Collins, Consulting Engineer, Philadelphia, Pa.

Yonkers, N. Y.—Bids will soon be advertised for pipe fitting at the new boiler house at the tube well station; plans and specifications were prepared by Rimsner & McClair.—W. H. Baldwin, Engineer, Water Commission.

Salem, N. C.—About 2,200 feet of mains will be laid.

Fargo, N. D.—Water main will be laid on Fourth street.

Mandan, N. D.—Council has granted a franchise to a private company to construct a water plant.

Minot, N. D.—Arrangements are being made to improve pumping station at the city water works.

Bellaire, O.—Bids will be received, September 7, for the purchase of \$10,000 4 1/2 per cent. 10-year water works improvement bonds.—R. E. Crow, City Auditor.

Shawnee, Okla.—Council has decided to improve the water system.—Address City Clerk.

Pilot Rock, Ore.—A water works system will probably be constructed; estimated cost, \$8,000.

Johnstown, Pa.—The Directors of the Johnstown Water Company have voted to extend the system sufficiently to furnish an ample supply of water from the Millcreek reservoir throughout the Eighth Ward; estimated cost of the improvement is between \$25,000 and \$30,000.

Macungie, Pa.—Water works will be built.

Mechanicsburg, Pa.—A new reservoir, pumping station and filter plant will be built by State.

Montoursville, Pa.—The water main on East Broad street is to be extended.

Reading, Pa.—The citizens in November will probably vote to borrow \$500,000 for filtration purposes; a section of the city has filtered water and there is great demand for improvement in the supply for the rest.

Scranton, Pa.—The Scranton Gas and Water Company is preparing to establish filter bed.

Erwin, Tenn.—A franchise has been granted to A. R. Brown for construction of water works.

McEwen, Tenn.—Plans have been completed for the establishment of a water system.

Bay City, Tex.—An election will be held, September 14, to decide the question of issuing \$18,000 water works bonds.—Address City Clerk.

Berclair, Tex.—C. B. Lucas has petitioned for franchise to build water system.—Address City Clerk.

Brownsville, Tex.—The citizens have voted to issue \$70,000 bonds for the erection of a water plant. Plans have been completed by W. P. Bullock, of Kansas City, Mo.

Corpus Christi, Tex.—Council has under consideration the purchase of water plant owned by a private company.

Marion, Tex.—Council proposes to establish a water plant.—Address City Clerk.

Rogers, Tex.—Plans are being prepared to secure water supply.—Address City Clerk.

Royce City, Tex.—Bonds for \$15,000 have been voted for water works.

Temple, Tex.—Arrangements are being made to issue \$150,000 bonds for building a modern water plant.—Address City Clerk.

Bristol, Va.—It is proposed to lay a main from the city to the reservoir, estimated cost, \$40,000.—Mayor Rice.

Prosser, Wash.—Council has directed an appropriation of \$10,000 for the purpose of sinking deep well.—Address City Clerk.

Seattle, Wash.—Assistant Engineer H. W. Scott estimates the cost of water systems at West Seattle, Columbia, Ballard, Hillman City and Magnolia Bluff, including two pumping stations, will be \$1,087,000.

Spokane, Wash.—The Board of Health has directed the City Engineer to prepare plans of the general source of water supply which could be secured for the city.

Tacoma, Wash.—The proposition will be submitted to Council, September 10, for an issue of \$2,000,000 bonds for the Green River gravity water system.—Address City Clerk.

Elkins, W. Va.—Bids will be received, September 5, for the purchase of \$40,000 sewer and water bonds; interest, 5 per cent.—George Henry, City Clerk.

Cheyenne, Wyo.—Council has under consideration plans to enlarge water system.—P. S. Cook, Mayor.

Wheatland, Wyo.—Bids will be received, September 7, for \$25,000 water works bonds.

Sienna, Italy.—The Municipal Council of Sienna, Italy, has approved the construction of an aqueduct for a water supply; this aqueduct will be about 64 kilometers (kilometer 0.62 of a mile) long, from the springs of the Ennicciolo, on Mount Amiata, near the village of Vivo, 3,900 feet above sea level, to Sienna, and is to be finished in 1910; the estimated cost is \$800,000.—Address No. 1333, Bureau of Manufactures, Washington, D. C.

LIGHTING AND ELECTRICITY

Decatur, Ala.—The Decatur Light, Power and Fuel Company will expend \$70,000 additional enlarging and improving its plant to furnish more light and power for Decatur and New Decatur.—H. B. Johnson, Manager.

Beebe, Ark.—The city contemplates establishment of electric light plant and water works.

Hot Springs, Ark.—Atwood Benton has franchise to operate an electric light plant; the plant will be in operation by April next.

Etna Mills, Cal.—The matter of installing an electric light plant is being considered by Council.

Napa, Cal.—The Board of Supervisors of Napa County has granted a franchise to D. L. Beard to maintain and erect poles and wires over the county for the transmission of electricity for lighting and power purposes.

Savannah, Ga.—The present lighting contract expires January 1, 1909; Council will employ electrical engineers to prepare specifications for a municipal lighting plant which will probably be built.

Greenfield, Ill.—Council has granted A. Y. Collins a franchise for an electric light plant.

Manito, Ill.—It is proposed to establish a new electric lighting system throughout the town.

Pana, Ill.—The Pana Gas and Electric Company is planning to increase the capacity of its plant and will install a new generator and replace an engine and generator with a direct connected set.—H. D. Larabee, Manager.

Terre Haute, Ind.—F. S. Moore, formerly Electrical Inspector for the Terre Haute Traction Company, has purchased the lighting plant at Rockwall, Ia.

Sioux City, Ia.—The Sioux City Gas and Electric Light Co. will expend \$100,000 improving plant.—L. L. Kellogg, Manager.

Taunton, Mass.—Council has appropriated \$4,000 for naphtha street lights.—Address Mayor Tracy.

Tekamah, Neb.—The citizens have voted \$7,000 additional electric light bonds.—Address City Clerk.

Morristown, N. J.—The Board of Public Service has purchased a site for additional building for electric plant.

Canajoharie, N. Y.—The Montgomery Electric Light & Power Company and the East Creek Electric Light & Power Company are making arrangements to build a substation on West Main street; as soon as the building is completed the old substation will be abandoned.—A. B. Cairns, Superintendent.

Sodus, N. Y.—The Town Board has signed a renewal of the present lighting contract of \$1,000 per year for five years, and the addition of \$500 yearly for five years; the petition asking for this action contained the name of nearly every resident taxpayer of the lighting district in Sodas.

Valley City, N. D.—The municipal electric lighting plant is inadequate to meet the city's needs, and is to be sold to the highest bidder, bids for which will be received some time this month.—B. F. Coddling is Chief Engineer; H. F. Halverson, City Auditor.

Bucyrus, O.—Council has made an appropriation for preliminary plans of a municipal electric lighting plant.

Lima, O.—Council is considering the installation of an electric plant as an auxiliary to the present pumping plant at the water works.

Painesville, O.—Plans are being made by the Commercial Electric Company to rebuild its local plant.—G. L. Williams, Chief Engineer.

Walter, Okla.—The Walter Electric Light & Power Co. has received franchise to construct electric light plant; estimated cost, \$25,000.—H. F. Tripp, City Clerk.

East Providence, R. I.—Town Council has authorized the installation of several incandescent lights.

Aiken, S. D.—The Carolina Light & Power Company, H. M. Dibble, President, has called a meeting to consider issuing \$40,000 of bonds for improvements.

Gary, S. D.—It is proposed to construct an electric light plant at a cost of about \$5,000.

Hubbard City, Tex.—The Union Central Light & Ice Company has secured franchise to establish a \$50,000 electric and ice plant.

Sioux Falls, S. D.—The Sioux Falls Light & Power Company will construct a dam and hydroelectric power plant at Sioux Falls to develop 3,300 h.p. at an estimated cost of \$200,000.

Seguin, Tex.—The Water and Light Commission held an important meeting in the Mayor's office and concluded to put \$5,000 in a boiler and engine for the electric plant on the river to be used in case of emergency.

Terrell, Tex.—Council has authorized an issue of \$15,000 bonds for electric light purposes.—Address City Clerk.

Ogden, Utah.—The Light Committee is considering application for extension of the franchise granted the Ogden Gas, Light & Fuel Company, presented by George A. Snow.

Milwaukee, Wis.—R. W. Hunt & Co., Rookery Bldg., Chicago, Ill., have presented the Board of Public Works an estimate of cost of the first work proposed on the municipal electric lighting plant under the specifications they have prepared; the estimated cost of the gas producer plant is \$100,000 and of the engines \$400,000.

Moosejaw, Sask., Can.—Council is considering plan to raise \$90,000 for improvements and extensions to the municipal electric lighting plant.—J. C. Jenner, Superintendent.

Kamloops, B. C.—The city desires information in regard to producer gas plants, but is not yet ready to receive bids.

Salt Lake City, Utah.—The Committee on Streets and Municipal Laws is considering a proposition of the Welsbach Street Lighting Company made through the Utah Gas and Coke Company to furnish the city with 900 street lamps at \$32 per year for three years, after which there is to be a reduction to \$31 per lamp, and after six years the cost would be \$30; the city is now paying \$72 a year for 574 street arc lights and most residence sections are poorly lighted; the cost of the lighting is now about \$40,000; the gas lights proposed would cost about \$27,000; the street lamps proposed would be for the purpose of replacing 450 arc lights; 124 arc lights would remain for the business district, which is over twice as many as there are now in this section.

Eau Claire, Wis.—The Chippewa Valley Light and Power Company has issued \$100,000 bonds for making improvements and extensions.

Alexandria, Egypt.—Tenders will be received until November 1 by the Egyptian Government for an electric installation for the port of Alexandria, comprising five large and seven small transporters, six 4-ton cranes, thirty-six 2-ton cranes, and twenty-five capstans; also cables, accessories, construction and installation of central power station.—Address Directeur des Ports et Phares, Alexandria, Egypt.—Address No. 1337, Bureau of Manufactures, Washington, D. C.

Athens, Greece.—Consul-General George Horton writes as follows from Athens: the city of Larissa is now ready to receive bids from contractors for an electric light and water supply, utilizing for the purpose the falls of the Peneios river, called "Vernezi;" these falls are distant from the city about 12½ miles, and they are capable of producing 2,400 horsepower. Address the Municipality of Larissa, Greece.—Address No. 1334, Bureau of Manufactures, Washington, D. C.

Napier, New Zealand.—No-term tenders will be received by the corporation of Napier, New Zealand, for the installation and working of combined electric light, power and tramways. Address the Town Clerk.—Address No. 1338, Bureau of Manufactures, Washington, D. C.

FIRE EQUIPMENT

San Mateo, Cal.—The Fire Chief has petitioned for additional fire protection.

Chicago, Ill.—The citizens of the Thirteenth Ward have petitioned for engine house to be erected in the vicinity of Colorado and Trumbull avenue.

Evansville, Ind.—The Board of Public Safety has petitioned for an additional hose house.

Joplin, Mo.—The issue of \$25,000 bonds for the purchase of a 75-foot aerial ladder, a steamer, chemical auto, additional apparatus, new station, etc., for the Fire Department is being considered.—J. C. Segars, Fire Chief.

Kansas City, Mo.—Plans have been accepted for three fire stations, estimated to cost \$41,000.

Roebing, N. J.—Council is arranging to organize a fire company.—Address Fire Chief.

South Orange, N. J.—The business men have petitioned Council for the purchase of a steam fire engine or the erection of a standpipe.

Union Hill, N. J.—Councilman John Seeck has reported in favor of new apparatus for the Pioneer Hose Company, and citizens will vote on same at the coming election.—Chief Engineer Stuetzer.

West New York, N. J.—Paul Marcy has been appointed architect of the proposed new Liberty fire house and is preparing plans and specifications; Council has voted to have repairs made to Excelsior steamer; hose and supplies will probably be purchased for Enterprise Hose Company.—Mayor Darling.

Oneida, N. Y.—Arrangements are being made to purchase additional fire apparatus.

Enid, Okla.—An election will be held to vote on the issue of \$25,000 bonds for fire protection.—Address Fire Chief.

Wilkes-Barre, Pa.—The Finance Committee has appropriated \$2,500 towards the purchase of a new fire truck.

San Angelo, Tex.—The citizens have voted \$20,000 in bonds for building an engine house.

PUBLIC BUILDINGS

Birmingham, Ala.—The County Board of Revenue has decided to expend from \$75,000 to \$100,000 for proposed alterations and repairs to county jail.

Hartford, Conn.—The Legislature has authorized an issue of \$200,000 4 per cent. 50-year school bonds.—Address Clerk of the Board.

Ft. Wayne, Ind.—Breed Harrison, of Cincinnati, O., has purchased \$75,000 school bonds at a premium of \$26.25 and accrued interest.

Estherwood, Ia.—The citizens have voted \$17,000 bonds for erecting school house.—Address Clerk of the Board.

Fall River, Mass.—All bids submitted by eight local bidders for constructing the proposed 12-room Westall school on Maple street were rejected by the Mayor and Superintendent of Buildings, being above the appropriation of \$70,000, the lowest being that of Patrick Corrigan, of \$69,753, which, with the architect's fee of 5 per cent., would bring the total to over \$72,000; the Finance Committee may raise the limit.

Springfield, Mass.—Council has authorized the expenditure of \$6,000 in addition to \$10,000 already appropriated for the construction of a four-room addition to the Howard street school.

Salina, Mich.—The School Board proposes to issue \$25,000 bonds for school purposes.—Address Clerk of the Board.

Bayonne, N. J.—The Board of Education will readvertise for bids for erecting No. 9 school, the bids of the O'Leary and Calumet companies having been rejected as too high; new bids will be opened at the October meeting.—Address Trustees Sexsmith, Donohue and Cain.

Elizabeth, N. J.—Council has authorized issue of \$25,000 bonds for isolation hospital.

Lockport, N. Y.—City Treasurer Hutcherson will sell \$5,000 bonds for the completion of the new City Hospital; the Hospital Aid Association raised \$5,000 for the purpose.

Syracuse, N. Y.—Bids will be received, August 27, 1 p. m., for \$200,000 4½ per cent. registered court house bonds; also \$25,000 Salina school bonds.—R. J. Shanahan, City Comptroller.

Rocky Mountain, N. C.—Bids will be received, September 1, for the purchase of \$20,000 school and \$135,000 5 per cent. 40-year improvement bonds.—W. L. Chort, Mayor.

Salisbury, N. C.—Frank P. Milburn & Co., Washington, D. C., have been awarded first place in the competition for the \$50,000 court

house for Rowan County; it will be of pressed brick with granite base, unless the plans are changed to permit the erection of an entire granite building, which would nearly double the cost.

Wheelerburg, O.—Bids will be received, August 30, for the purchase of \$10,000 4 per cent. school district bonds.—J. B. Fullerton, Clerk of the Board.

Carbondale, Pa.—The School Board will offer for sale \$26,000 in bonds.—Address Clerk of the Board.

Indiana, Pa.—As a special election the proposition to issue \$100,000 in bonds for building school house carried.—Address Clerk of the Board.

Pittsburg, Pa.—The City Board of Charities has under consideration an issue of \$500,000 bonds for constructing buildings destroyed by fire at the City Home at Marshallsea.—J. P. Shaw, Director.

Belles, Tex.—Bids will be received, September 1, for the purchase of \$12,000 5 per cent. 5-40-year school bonds.—W. B. Blankton, Secretary of the Board.

Anderson, W. Va.—Bids will be received, August 31, for the purchase of \$15,000 5 per cent. school building bonds.—A. McVeigh Miller, Secretary.

Triadelphia, W. Va.—The School Board will offer for sale \$30,000 bonds for the erection of school house.

Wheeling, W. Va.—The citizens have voted in favor of issuing \$200,000 bonds for erecting Court House.—Address County Auditor.

Spring Green, Wis.—An election will be held to decide the question of issuing \$50,000 school bonds.

STREET RAILWAYS

Dothan, Ala.—William Crawford has petitioned for franchise to operate an electric road three miles in length.

Jacksonville, Fla.—George W. Clark is arranging to build an electric line.

Boise, Ida.—The Commissioners of Ada County have granted a franchise to the Boise and Interurban Railway to extend its line over many of the streets of Boise not inside of the corporation limits; work has already been commenced on the extensions, and it is on this work that the company proposes to expend \$150,000 this year.

Evansville, Ind.—Surveys are now at work on the Evansville & Mt. Vernon Traction lines, and within a few days improvements will be begun at a cost of \$40,000; the roadbed will be ballasted the entire distance from this city to Mt. Vernon.

Kearney, N. J.—Council has appointed a committee composed of Councilmen Kraft, Calthness and Reid to wait upon the Public Service Corporation and request it to keep its promise to run larger and better cars through the town.

Newark, N. J.—The Morris County Traction Company was granted permission to lay tracks in Springfield avenue, from Main street, Millburn, to the line in Maplewood, by the Road Committee of the Board of Freeholders.

Las Vegas, N. M.—The Commercial Club has raised \$60,000 for building an electric line.

Warsaw, N. Y.—The Rochester, Scottsville & Caledonia Railway Company has a corps of engineers surveying the trolley line from Le Roy to Warsaw and Perry.

Salisbury, N. C.—The New South Investment Company has been chartered to build and operate street railways, etc.; capital stock, \$5,000,000; Cornelius O'Connor, of New York; Frederick E. Pierce, of Williamsport, Pa.; L. J. Gaskill, of Salisbury, Incorporators.

Enid, Okla.—The Enid, Blackwell & Osage Interurban Traction Co. has been chartered with headquarters at Enid; capital, \$1,000,000; the company will build from Enid to Pawhuska, 35 miles; the incorporators are Geo. W. Bear, S. I. Hudkins, J. R. Clover, all of Enid, and others.

Carrigo Springs, Tex.—Dr. D. J. Woodward, of San Antonio, is promoting a project to build an electric road from Cotulla to Carrigo Springs.

Roanoke, Va.—The Roanoke Street Railway and Electric Company proposes to extend its line in the southwestern part of the city.

Tomahawk, Wis.—Tomahawk & Eastern Railway Company, Tomahawk, to construct and operate a railroad from Tomahawk to Harrison and from Antigo Junction to Grundy Junction, a distance of twenty-one miles, has been incorporated with a capital stock of \$25,000.—W. T. Bradley, J. W. Froelich, C. H. Grundy and others, Incorporators.

Milan, Italy.—A demand for a concession for an electric railway from Brescia to Caffaro will shortly be submitted for the approval of the Council of Public Works, Milan, Italy; estimated cost is \$1,000,000.—Address No. 1332, Bureau of Manufactures, Washington, D. C.

BRIDGES

Glen Rose, Ark.—The citizens of Somervell County have voted to build a bridge over the Brazos, between Glenrose and Cleburne.

Little Rock, Ark.—The Road and Bridge Commissioner has been instructed to take measurements for a steel bridge across Fourche on the Frazier pike; measurements have been taken for a steel structure over Sibley hole on R. F. D. route No. 3, which is near Mabelvale; measurements also have been taken for a wooden structure across Fourche, near Wrightsville.

Pine Bluffs, Ark.—The bridge at the intersection of Twenty-second and High streets, reported as unsafe, has been ordered torn out and replaced by a more substantial one of concrete; an 8-foot arch concrete culvert is to be placed under the tracks of the street railway on Sixteenth street, between Pulaski and High streets, the work to be done by the Commissioners of the Districts and the street car company.

Waukegan, Ill.—Council has requested the North Shore Electric Line to build a bridge, at a cost of \$25,000.

Lafayette, Ind.—The Commissioners of Tippecanoe County have recommended an appropriation of \$50,000 to be made by the County Council for building bridge at Granville, just above Black Rock, across the Wabash.

Shreveport, La.—The Allen-Wadley Lumber Company will build ten miles of railway; a steel bridge is included in the construction.

Lynn, Mass.—It is estimated that the final cost of the Waters river bridge will not be far from \$60,000.

St. Joseph, Mich.—Plans prepared by City Engineer Cleary and approved by Council for new State street bridge are only general in detail, but they give an excellent idea of a few vital points concerning the proposed structure; Engineer Cleary drew the plans for a draw and lift bridge, which will be presented to the Government Engineers for their approval in the near future.

Joplin, Mo.—Bonds will probably be issued for the construction of a steel viaduct over the Kansas City bottoms to East Joplin.—Councilman J. S. Board.

Leroy, N. Y.—A special town meeting was held to vote on a \$20,000 appropriation for a new bridge over the Oatka river, on Main street; the plan is to widen the bridge, making it about sixty feet wide; it is to be a concrete structure; the undertaking will not begin until next spring.—Address City Clerk.

Rochester, N. Y.—County Engineer McClintock has completed plans for a draw bridge at Helen Dale crossing, where the Glen Haven trolley line crosses the Bay Village road; under the new plans the bridge and approach will be 200 feet long, and will cost about \$5,000; the change was recommended by C. R. Barnes, electrical expert of the Public Service Commission, and also by the Board of Irondequoit.

Estacada, Ore.—The Clackamas river is to have a new bridge at Estacada, and the structure will probably be located down stream from the present bridge opposite the lower end of the town, as the people of this place have agreed to defray the expense of building a road to connect with the bridge.

Pittsburg, Pa.—The County Commissioners propose to issue \$500,000 bonds for bridges; new bridges are being planned for Oakmont and Sewickley; the one at Monongahela will probably have to be rebuilt; about \$500,000 will be required for the structures.

MISCELLANEOUS

Sacramento, Cal.—The Board of Supervisors have ordered a special election, September 10, to issue bonds for a court house, jail, roads, bridges and highways; the contemplated issue is \$1,260,000.

Albany, Ga.—The citizens will vote, September 23, on \$75,000 bonds for municipal building, new water mains, etc.—Address Mayor Rawson.

Council has called a bond election, September 23, to pass on issue of \$75,000 bonds for municipal improvements, including surface drainage system, extension of sanitary sewerage and water mains into newly annexed territory and a municipal building.—Address Mayor Rawson.

Antlers, I. T.—The Secretary of the Interior has authorized an issue of \$8,000 improvement bonds.

Hopkinsville, Ky.—W. F. Garnett & Company have purchased \$100,000 Christian County bonds at a premium of \$3,000.

Baltimore, Md.—An election will be held in November to decide the question of issuing \$5,000,000 bonds for park improvements.—Address Clerk of the Park Board.—J. Barry Mahool, Mayor.

Grand Rapids, Mich.—Council has decided to issue \$90,000 bonds for flood protection.—Joseph Renihen, Chairman.

Minneapolis, Minn.—A contract has been entered into for the purchase of 144 Dean ballot machines, together with all improvements, whether patented or not, which may hereafter be made in the machines.—J. C. Haynes, Mayor.

Helena, Mont.—Helena is to have a third great dam across the Missouri river for the development of electric power, and a portion of this will be utilized for a pumping plant which will reclaim 10,000 acres of land in Prickley Bear Valley, just below the city; the pumping plant will cost between \$400,000 and \$500,000; the dam will cost approximately \$1,000,000; the power will be utilized to a large extent in Butte mines; A. M. Holter, of Helena, is at the head of the movement.

West New York, N. J.—The Board of Council has passed an ordinance providing for a \$200,000 bond issue at 5 per cent.—Mayor Darling.

Schenectady, N. Y.—City Engineer Sebring and former City Engineer Fitzgerald, the latter representing the Brandywine Ice Company, are preparing a set of plans for the reconstruction of the Brandywine pond dam.

Spencerport, N. Y.—Dr. H. M. Roberts, F. F. Coleman and W. H. Link, of Herkimer, N. Y., have made application to the Board of Trustees for a franchise to establish a water works and sewer system in the village; Chauncey Brainard, George M. Cole, Attorney Berton W. Brown and M. T. Page, all of Spencerport, also signed the application; they propose to form a corporation to be known as the Spencerport Water Company.

Gastonia, N. C.—Bids will be received, October 1, for the purchase of \$75,000 5 per cent. 30-year improvement bonds.—E. W. Lineburger, Town Treasurer.

Dayton, O.—Bids will be received, September 3, for the purchase of \$77,000 improvement bonds.—Edward Phillip, City Auditor.

Lakewood, O.—Bids will be received, September 9, for the purchase of \$3,000 5 per cent. improvement bonds, \$4,400 4 per cent. improvement bonds.—D. M. Cook, Clerk of the Board.

Pioneer, O.—Bids will be received, August 30, for the purchase of \$3,500 5 per cent. bridge and highway bonds.—Maurice Rowland, Village Clerk.

Enid, Okla.—A special election will be held to vote on the question of issuing \$300,000 30-year 5 per cent. improvement bonds.—Address City Clerk.

Portland, Ore.—Council has authorized the City Board of Health to select a location for the proposed new garbage crematory.

Butler, Pa.—The Town Council offered \$16,000 4 per cent. semi-annual bonds for sale.—Wm. F. Rumberger, Borough Treasurer.

Harrisburg, Pa.—Council will appropriate \$1,715 for the maintenance of playground at Hargest's Island.

Pittsburg, Pa.—The County Commissioners are planning to issue \$1,500,000 bonds for erecting Memorial Hall and building county bridges.—Address County Auditor.

York, Pa.—An election will be held, September 10, to vote on the question of issuing \$750,000 bonds for sewer, street and other improvements, and not \$75,000 bonds, as has been stated.—Address City Clerk.

Newport, Tenn.—Bids will be received, September 14, for the purchase of \$37,500 water works and \$7,500 electric light bonds.—Address City Clerk.

San Angelo, Tex.—The citizens have voted \$20,000 bonds for the establishment of a fire station and crematory.—Address City Clerk.

BIDS RECEIVED

Decatur, Ala.—The Southern Bitulithic Company, of Nashville, Tenn., has been awarded a contract for 31,921 square yards of bitulithic.

San Jose, Cal.—The Joshua Hendy Iron Works has been awarded contract, at \$125 each, for special design of electrolier known as the San Jose electrolier, the design having been deemed best by the committee of merchants and property holders.—Walter Trinkler, Chairman of Committee.

New Haven, Conn.—Warren Brothers, Boston, Mass., were low bidders for paving State street between Grand avenue and Mill river, at \$2.75 per square yard, with 10-year guarantee; the Standard Bitulithic Company of New York City bid \$2.89 and the Atlantic Bitulithic Company, Richmond, Va., \$2.78 a square yard; S. D. Pierce Company, of Bridgeport, was low on Carlisle street, between Liberty street and Howard avenue, at \$2.186.10; Frank Bragos bid \$2.253.42; Upson & Daley, \$2.237.28, and C. W. Blakeslie & Sons, \$2.289.99; the Connecticut Hassam Pavement Company was the only bidder for paving Oak street, between Temple and Broad street.

Columbus, Ga.—The contract for bitulithic paving with the Southern Bitulithic Com-

pany of Nashville, Tenn., has been increased 1,250 square yards.

Peoria, Ill.—Charles W. O'Neil, of Peoria, was low bidder for constructing the Fourth District sewer, at \$113,477, but E. R. Hardin, of Racine, Wis., who bid \$113,977.40, claimed that the bid was not submitted until after the time advertised and was not submitted on the blank provided; the Independent Construction Company, of Davenport, Ia., bid \$119,102.88, and People's Construction Company, Davenport, Ia., \$122,470. — Mayor Schnellbacher, President, Board of Local Improvements.

Indianapolis, Ind.—The Western Construction Company, of Lafayette, Ind., has been awarded a contract for 14,125 square yards of bitulithic.

Ft. Wayne, Ind.—John Grosjean has been awarded contract for constructing cement walks on the east side of Fifth street, from Wells to Barthold, at 42½ cents a lineal foot; contract for cement walks on the east side of Wells street, from Miller's lane to Archer avenue, and on the west side of Wells street, from Huffman street to Archer avenue, was let to O. F. Menefee, at 58 2-5 cents; the Moellering Construction Company landed the paving of the alley between Main and Berry streets, from Barr to Lafayette, at \$2.51 a lineal foot; also contract for paving Harmony court, from Main street to the first alley south, at \$3.14; work of grading Barthold street, from Fourth to Spring street, to George Wilhelm, at 28 cents a lineal foot; Derheimer & Co., grading Maud street, from Thomas to Holton street, at 23½ cents a lineal foot; also for building 12-inch sewer in alley west of Runyon avenue, at 77 cents a lineal foot.

Mason City, Ia.—George Gabler, of Mason City, has been awarded contract for 18,000 square yards Purington paving block on 6-inch Portland concrete base, 2-inch sand cushion, Portland cement filler, expansion joints asphalt, at \$2.10 per square yard, and 4,900 lineal feet cement curbing, at 40 cents.

Sioux City, Ia.—The one bid received just a week before for lighting the city streets has been accepted by Council, and the Mayor authorized to enter into a contract with the Sioux City Gas and Electric Company for ten years for arc lights on an all night schedule for \$75 per year and 32-candle-power incandescent lights at \$20 per year; the entire contract means the payment of practically \$20,000 a year.—Alderman T. W. Bayne, Chairman, Lighting Committee.

Louisville, Ky.—Henry Bickel was low bidder for constructing retaining wall, and will in all probability receive the contract at his bid of \$10,000.

Baltimore, Md.—The Board of Estimates has awarded contract for paving Robert street, from Whitelock street to Druid Hill avenue, to F. W. Schneider & Co., and for paving Lombard street, from Catherine street to Wilkens avenue, to P. Reddington & Sons. Contracts for paving Wilkens avenue, from Wilkens street to the southern city limits, were referred for tabulation, as was the contract for paving Seventh street, from North avenue to Northwest street. In the estimates presented by the City Engineer's Department the contract for a footway on Patuxent street, between Baltimore street and Eastern avenue, was awarded to F. E. Schneider at 15 cents per square foot.

The contract for building No. 15 truck house for the Fire Department was awarded to Milton C. Davis; the cost is to be \$15,000.

The contract to furnish the city with 90 dozen 30-inch brooms for the Street Cleaning Department was awarded to F. Beck & Co., at \$7.65 a dozen, an advance of 65 cents over past years; the increase was explained on the ground of increased cost of material; the Board hesitated some time before passing the bid, as it was the only one received.

Lawrence, Mass.—Phillip Holland has been awarded contract to build the Central Fire Station, for \$51,350.60, work to be completed by November 15.—Mayor Kane.

Lynn, Mass.—An additional contract for 3,938 square yards of bitulithic has been awarded to Warren Brothers Company, of Boston.

Detroit, Mich.—The Central Bitulithic Company, of this city, has received a contract for 5,276 square yards of bitulithic.

Bayonne, N. J.—Storms & Co. have been awarded contract for heating and ventilating No. 9 school, for \$18,123, and Jennings & People Company, for plumbing, for \$10,434.

Cranford, N. J.—W. H. Weldon has been awarded contract to improve Maple place, for \$1,702.72; J. C. Park bid \$1,727.52.

T. Foster Callahan, Elizabeth, has been awarded contract for sanitary sewers, at \$24.089.20, as follows: 1,151 ft. 8-in. sewer, under 6 ft. deep, 48 cents; 11,860 ft. 6 to 8 ft. deep, 55 cents; 5,753 ft. 8 to 10 ft. deep, 64 cents; 1,463 ft. 10 to 12 ft. deep, 70 cents; 430 ft. 10-in. sewer, under 6 ft. deep, 57½ cents; 555 ft. 6 to 8 ft. deep, 64 cents; 743 ft. 8 to 10 ft. deep, 75 cents; 370 ft. 10 to 12

ft. deep, 83 cents; 50 ft. 12 to 13 ft. deep, 85 cents; 1,617 ft. 8-in. c. i. sewer, under 6 ft. deep, \$1.25; 608 ft. 6 to 8 ft. deep, \$1.45; 72 ft. 10-in. c. i. sewer, under 6 ft. deep, \$1.90; 200 ft. 6 to 8 ft. deep, \$2.10; 273 ft. 8 to 10 ft. deep, \$2.30; 450 ft. 10 to 12 ft. deep, \$2.50; manholes, 5 ft. deep, \$44.50; 8 to 10 ft., \$47.50; 10 to 14 ft., \$52.50; branches, on 8-in., 55 cents, on 10-in., 70 cents; crosses, on 8-in. c. i. sewer, \$6.50, 10-in., \$9; tees, on 8-in. c. i. sewer, \$3, on 10-in., \$4; flush tanks, \$75; 4-in. house connections, 30 cents; 4-in. c. i. house connections, 95 cents; other bids were: John Coltery, Weehawken, \$26,057.69; C. M. Meeker, Plainfield, \$25,083.43; E. W. Chamberlain, Westfield, \$32,913.75; Cavaluzzo and Zizzo, Newark, \$40,454.05; James J. Fuseo, Montclair, \$35,583.20; Mac Menawin and Hillpot, Round Brook, \$29,520.35; Warren B. Travell, Plainfield, \$27,630.63; T. J. McGovern, Trenton, \$38,703.70; Evelyn Brothers, New Britain, Conn., \$30,211.64.—Andrew J. Gavett, Engineer-in-Charge.

Elizabeth, N. J.—Contracts have been awarded as follows: T. Foster Callahan, napping and curbing the south side of Third avenue, from Spencer to Loomis street, \$594.62; flagging the east side of Spencer street, from Third avenue to Fourth avenue, \$523.22; flagging both sides of South Fifth street, from Third avenue to Fourth avenue, \$1,322.36; Matthew Wade, sewer in South Fifth street, from Third avenue to Fourth, \$727.60; same, sewer in Spencer street, from Third avenue to Fourth, \$783.20.

Newark, N. J.—James A. Christie was low bidder on 330 feet 12-inch pipe, 8-foot trench, at \$1.10; 670 feet 10-inch, 8-foot trench, 85 cents; 2,280 feet, 7-foot trench, 72 cents; 3,880 feet 6-inch pipe, 6-foot trench, 35 cents; deep and wide socket pipe to be used; sand excavation, ground water to be handled; no paving to be excavated and relaid; manholes, \$45; flush tanks, including flushing appliance, \$135; wages of common labor, \$1.75 per day; total, \$5,718.10; Chas. Ippolito bid \$7,809, and Pasqualli Cestone, \$9,107.20.—Edward S. Rankin, Engineer, Sewers and Drainage.

Orange, N. J.—Council has awarded to John F. Driscoll the contract to place storm sewer in Bell street.

Plainfield, N. J.—C. M. Meeker, Plainfield, N. J., was awarded contract for 15,792 square yards of Brady's Run brick, on 4-inch concrete foundation, at \$2.39-\$2.40 per square yard, including excavation; also resetting 1,400 lineal feet old curb at 20 cents and setting 1,935 feet new curb at 60 cents; total, \$39,441; including curbing, surface drains, manholes and inlets; Evelyn Brothers, New Britain, Conn., bid \$55,536; Russell Contracting Company, New York City, Clearfield brick, \$44,337; Brady's Run or Buffalo-Pittsburg brick, \$46,390; Layton brick, \$44,568; M. Norman, Germantown, Pa., Mack brick, \$44,351; Reeves Smith, New Britain, Conn., Mack brick, \$44,515; J. F. Kerwin & Co., New Brunswick, Brady's Run brick, \$43,889; Hassam Paving Co., Worcester, Mass., Brady's Run brick, \$40,261; Layton, \$37,734; Mack, \$43,209; Clearfield, \$38,366; MacMenawin & Hillpot, Bound Brook, Clearfield, Paton or Layton brick, \$40,791; T. J. McGovern, Trenton, irregular bid, Layton brick, \$36,742.—Andrew J. Gavett, City Engineer.

Union Hill, N. J.—Anthony Rosello, of New Durham, was low bidder for the removal of ashes and garbage, at \$3,475; James Pavadano, who has now the contract at \$3,950, bid \$4,800 for another year; Eugene Knox was the lowest of five bidders for furnishing a horse, cart and man for the Street Department, at \$4.63 a day per horse, cart and man, and the same price for horses for the sweeper or extra horses and carts.—William Rannenbergh, Chairman, Board of Council.

West New York, N. J.—Nolan & Hornung were low bidders for an 18 and 20-inch pipe sewer in Hudson avenue, from Twenty-first street to Twenty-third street, and for the construction of a 12-inch pipe sewer in Palisade avenue, from Twenty-second street to Twenty-third street; other bidders were Joseph Roscetti, Henry & Emoner, James Finneran, G. A. Blumentstock and Ganley & Nau.

Albany, N. Y.—Superintendent F. C. Stevens, of the State Department of Public Works, has awarded the contract for the enlargement of the Erie canal from Onondaga lake westerly to Mosquito Point bridge, on the Seneca river, to Stewart, Kerbaugh & Shanley Company, of New York City, whose bid was \$3,395,766; the bid was in excess of the engineer's estimate, but as this was the second time the contract had been advertised it was decided, after a conference with the engineers, that it was to the advantage of the State to accept the bid; on the first occasion no bids were received.

Jamestown, N. Y.—The United States Cast Iron Pipe Company, Buffalo, has been awarded contract for furnishing 12,000 feet 16-inch water pipe weighing about 750 tons and 750 feet 12-inch pipe weighing about 28 tons, for \$32.70 per ton of 2,000 lbs., and specials

weighing 10,000 lbs., for 3½ cents per lb., delivered f. o. b.; total, \$25,790.60; R. D. Wood & Co., Philadelphia, bid \$34.30 for pipe and 3 cents for specials, total, \$26,985.40; Massillon Iron and Steel Company, Massillon, O., \$34.40 for pipe and 3 cents for specials, total, \$27,063.20.

J. C. Swanson & Company, Jamestown, have been awarded contract for trenching and laying about 12,000 feet 16-inch pipe, at 83 cents per foot, and about 750 feet 12-inch pipe, at 60 cents, total, \$10,410, including back-filling and setting all hydrants, valves and specials and furnishing lead, hemp, and necessary tools; Thomas Mahoney, Jamestown, bid \$8,520, but his bid was incomplete and he was allowed to withdraw it; Morasco & McCafferty, Pittsburg, Pa., bid \$12,750; C. F. McGuire, Hornell, \$16,065; M. Applegate & Son, Alliance, O., \$10,417.50; James A. Gardner, Jamestown, \$13,462.50.

J. C. Swanson & Company, Jamestown, has been awarded contract for handling about 783 tons of cast-iron water pipe and specials for 60 cents per ton; total, \$469.80; Morasco & McCafferty, Pittsburg, Pa., bid \$1 per ton.—Clement B. Jones, Secretary, Water Commission.

Lockport, N. Y.—John C. Fogle was low bidder for reconstructing the High street school, at \$16,533; L. C. Wille bid \$16,659.

Milton, N. Y.—The Board of Trustees has signed a contract with E. J. Richards, Superintendent of the Newburgh Light, Heat and Power Company, to light the village streets with 30 incandescent lamps; poles will be erected and wires strung at once.

Rochester, N. Y.—Bert Warren has been awarded contract for excavating and concrete work in building conduits at the County Buildings; other bids were: John J. Heveron, \$8,475; Harry Holder, \$7,920, and C. L. Horn, \$5,400.

Yonkers, N. Y.—Kearns & Hart have been awarded contract for trenching and refilling and laying 4 and 6-inch pipe in Midland avenue, at 35 cents per foot and \$3.25 for rock excavation; Robert de Strange bid 35 cents for pipe and \$3.50 for rock; M. Callahan, 54 cents for pipe and \$4 for rock; and Kelly, 42 cents for pipe and \$3.45 for rock excavation.

Asheville, N. C.—A contract for 6,500 square yards of bitulithic has been awarded the Atlantic Bitulithic Company, of Richmond, Va.

Canton, O.—C. B. Sommers was awarded the Navarre street sewer job, at \$590.

Cincinnati, O.—About \$18,000 worth of asphalt street repaving has been awarded to the Barber Asphalt Paving Company, at \$10.75 per cubic yard.

Cincinnati, O.—The County Commissioners have awarded the contract to furnish crushed stone at College Hill for the improvement of Milcreek township roads to Donnelly and Dovey Construction Company, for \$585.60; the improvement of Eagle Creek road to John Fagally, at \$671.

Columbus, O.—The contract for constructing the sewage force main has been awarded by the Board of Public Service to the New York Construction Company, at \$39,915.50; this was the second call for bids; at the first the lowest bid was \$43,000.

Columbus, O.—The Cleveland Trinidad Paving Company was beaten by A. G. Pugh, of Columbus, on the job for Trinidad asphalt.

Dayton, O.—The Board of Service has awarded to Frederick J. Cellarius contract for furnishing to city two detail property maps of the city, at \$400 per copy, and 25 copies of the atlas of the city with adjoining property, at \$30 per copy.

Dayton, O.—The Board of Service has awarded Robert Lyon contract for improving half of Stewart street, at \$1.70 per lineal ft. for grading, graveling and laying cement curb and sidewalk.

Fremont, O.—The Modern Construction Company was awarded contract for paving Castalia street, at \$22.54.

Gallon, O.—E. W. Longell was high bidder for the construction of the new sewage plant at the Infirmary, and Theo. Scherd, of Lima, was low bidder.

Lisbon, O.—The contract for paving and grading the East Liverpool and Wellsville road, from Brady's graveyard west to Silver switch, was awarded to Allison and McCullum, of East Liverpool, at \$11.975. Rinehart Brothers, of same town, bid \$12,809 for the county paving job, and were awarded the contract.

Marietta, O.—Putnam and Price were awarded the Green street paving job, at \$5,400.

New Bremen, O.—J. Mulligan, of Lima, was awarded contract for paving Washington and West Monroe streets, and one square on First street; William Barth was awarded contract for sewer in Main street, at \$2,555.59.

Oberlin, O.—The contract for paving West Lorain and North Professor streets was awarded to Baldwin Brothers and Graham; their first bid was \$32,215, and with a de-

duction of \$2,500 they were awarded the contract.

Portsmouth, O.—The contract for paving Highland avenue was awarded to Kelley Brothers; the street is to have a gravel foundation, cement curb and gutter, tar filler, and be constructed of any kind of brick.

Steubenville, O.—Harry Bates has been awarded the contract for paving Washington street, at \$1,788.26.

Springfield, O.—W. F. Payne was awarded contract for grading and graveling Willard avenue and setting combined curb and gutter, at \$1,149.10; also James street, at \$1,946; J. F. McClure was awarded contract for improving Chase street, at \$2,878.50; Ed. Ryan will pave Grape alley with Peebles brick at \$145 per running foot. W. F. Payne will pave Grape alley with Peebles block, at \$1.45 per lineal foot.

Toledo, O.—The Board of Public Service has awarded to Breyman and O'Neal contract for the construction of sewer, at \$96,100.

Toledo, O.—The Ohio Paving Company was awarded the contract for paving Sherman street with Logan block, on a concrete foundation, at \$9,023.50 and \$16,830.

Toledo, O.—Garrigan Brothers have been awarded contract for paving Summit avenue; James Sheehan, who was low bidder by \$11,000 having failed to sign the contract sent him, the city may try to collect from Sheehan on his bond the difference in price between his bid and Garrigan Brothers' bid on the exact cost of the work.—James Jackson, Board of Public Service.

INCORPORATIONS

Arkansas Valley Traction Company, La Junta, Col.; to build interurban line to Rocky Ford; capital, \$100,000.

Elizabeth Light, Heat and Power Company, Elizabeth, Ill.; operate heat, light and power plant in Elizabeth, Ill.; capital, \$25,000. Incorporators: Harry E. Murray, Frank M. Marvin, Rolla R. Longenecker.

James River Water Power Company, Buchanan, Va.; to construct a water power electric plant at Little Tunnel; capital, \$500,000. Incorporators: O. C. Huffman, and others.

Municipal Waste Disposal Company, Worcester, Mass.; waste disposal, etc.; capital, \$50,000. Incorporators: President, James H. Mellen; treasurer, Michael J. O'Reilly; clerk, Edward A. Ryan, all of Worcester.

Panama Power Company, Harmony, Chautauqua County, N. Y.; light, heat and power; capital, \$4,000. Incorporators: Walter Tanner, Glen G. Burnham, Isaac N. Button and Delancy D. Cone, all of Panama, N. Y.

Peru Chemical Gas Co., Peru, Ind.; to manufacture gas. Incorporators: J. O. Cole and J. T. Armistead.

Phillips Contracting Company, Cold Spring, N. Y.; contracting; capital, \$5,000. Incorporators: Egbert V. Nelson, Cold Spring, N. Y.; Theron H. Sammis, 37 Liberty street, New York; J. J. Phillips, 229 West One Hundred and Forty-second street, New York.

Pittsburgh Oil, Gas and Mineral Company, 419 Market street, Camden, N. J.; crude petroleum, gas works, etc., mining, etc.; capital, \$25,000. Incorporators: Julius Weiss, Edward H. Flood, H. H. Robbins, all as above.

Russellville and Ozark Mountain Traction Company, Russellville, Ark.; capital, \$250,000. Incorporators: Adam Robinson, President; J. C. Wilson, Vice-President; James Gould, Secretary, and W. H. Langford, Treasurer.

Valley Transit Light and Power Company, New Philadelphia, O.; capital, \$100,000. To construct and operate a road between Canton, Dover, New Philadelphia, Newcomers-town, Coshocton, Newark and Columbus. Incorporators: Clyde J. Kneisely, Michael Siebold, E. S. Rhoades, W. W. Snyder, F. G. Knorz, W. J. Wise, T. F. Hynes and F. O. Richards.

Walton Public Service Company, Walton, N. Y.; electric lighting, etc.; capital, \$50,000. Incorporators: Edwin L. Gung, Arthur G. Patterson, James A. Crawford, Walton, N. Y.

Proposals

PAVING, SEWERING AND CURBING

Johnson City, Tenn.

Sealed proposals will be received by the Recorder until 12 o'clock, noon, September 5, 1907, for the paving of parts of Main, Market, Roan, Tipton, Spring, Buffalo and Watauga streets, about 48,000 square yards, with vitrified brick, bitulithic, asphalt Has-sam or other good materials; also approximately 22,000 square feet concrete sidewalk, 4,600 linear feet concrete curbing and 4,200 feet 8-inch vitrified sewer, with all necessary Y's, manholes, flush tanks, etc.

All according to plans and specifications on file in the office of the City Engineer.

Certified check or approved bond in the sum of 10 per cent. of amount of bid must accompany all bids.

City reserves the right to reject any or all bids. Bids will be opened by the Board at 7:30 p. m., September 5.

Specifications may be had from the City Engineer.

E. E. ELLSWORTH,

Recorder.

L. N. WILSON, JR.,
City Engineer.

Clerk of B. P. S.

WATER WORKS IMPROVEMENTS

The Council of the Village of Stambaugh, Michigan, will receive proposals for improving its water works system at the Council room in the Village Hall up to 8 p. m., September 9, 1907.

A certified check for \$250 to be deposited with each bid.

Plans and specifications prepared by Edmund T. Sykes, of Minneapolis, Minnesota, designing engineer, will be on file in the Council room; also on file in the office of A. J. Waffan, Village Attorney, from and after August 26, 1907.

The Council reserves the right to reject any or all bids.

GEORGE A. HAMILTON,

Village President.

ERICK ERICKSON,

Village Clerk.

Attest:

AUGUST J. WAFFAN,
Village Attorney.

SEWERS AND PAVING

Notice to Contractors

Canton, O.

Sealed bids will be received by the Board of Public Service, at their office in the City Hall, Canton, Ohio, until 12 o'clock noon, central-standard time, Monday, September 3, 1907, for constructing street improvements and paving upon gravel and concrete foundations, estimated cost of the work being \$82,424.80, and for storm water and sanitary sewers, estimated cost being \$9,944.70.

For specifications, proposals and additional information as to the amounts of deposits required with bids, etc., address the undersigned.

B. F. FAUST,

Clerk of B. P. S.

W. E. SARVER,
City Civil Engineer.

FURNISHING AND LAYING SEWER PIPE

Office of the Sewerage and Water Board,
Nos. 602-604 Carondelet street,
New Orleans, La., July 2, 1907.

Sealed proposals will be received until 3 o'clock p. m., Wednesday, September 11, 1907, for the construction of, approximately, 110 miles of sewers and appurtenances.

The sewers will range in size from 8 to 27 inches, and in depth from 5 to 17 feet, and will include, approximately, 1,230 manholes and 443 flush tanks.

The work will be divided into four contracts; and a certified check on a New Orleans bank for \$1,500 must be deposited with the Secretary of the Sewerage and Water Board not later than 2 o'clock p. m., Wednesday, September 11, 1907, by each bidder, and one check for each contract bid upon.

A surety company bond for an amount equal to 25 per cent. of the gross amount of each contract will be required of the successful bidder in each case.

Specifications, general plans and blank forms of proposals may be seen at the office of the Board, and specifications will be printed, ready for distribution, after July 15, 1907.

F. S. SHIELDS,

Secretary.

GEO. G. EARL,

General Superintendent.

GRADING

Office of the Commissioners, D. C.,

Washington, D. C., Aug. 20, 1907.

Sealed proposals will be received at this office until 12 o'clock noon, Tuesday, September 3, 1907, for grading Albemarle street, amount available, about \$8,500. Blank forms of proposal, specifications and all necessary information will be furnished on application at room 43, District Building.

HENRY L. WEST,

JAY J. MORROW,

Commissioners, D. C.

CEMENT SIDEWALKS AND CURB

The City of Lake Charles, La., will on September 3, 1907, let contracts for the construction of about fifteen miles of cement sidewalks and brick or cement curbing. Specifications and other information will be sent upon application to City Engineer.

C. H. WINTERHALER,

Mayor.

GARBAGE CREMATORY

Ft. Benjamin Harrison, Ind., Aug. 21, 1907.

Sealed proposals in triplicate for a garbage crematory will be received here until 10 a. m., September 13, 1907, and then opened. Full information furnished upon application. Right is reserved to accept or reject any or all bids received. Envelopes should be endorsed "Proposals for Crematory," and addressed to

GEO. H. PENROSE,

Quartermaster, U. S. Army.

Civil Service Examinations

Mechanical Draftsman.—The United States Civil Service Commission announces an examination September 18-20 to secure eligibles to fill two vacancies in the position of skilled draftsman, at a salary of \$1,000 to \$1,200 per annum, in the office of the Chief of Ordnance, War Department. Apply on Form 1312.

Hydrographic Surveyor.—The United States Civil Service Commission announces an examination, September 4-5, to secure eligibles to fill several vacancies in the position of hydrographic surveyor, at salaries ranging from \$1,200 to \$2,200 per annum, in the Navy Department. Apply on Form 1312.

WANTS

WANTED—A good sewer foreman; must be a thoroughly reliable man, capable of running reinforced cement job of sewer construction. Apply or write C. T. McCracken & Co., Charleston, W. Va.

WANTED—Civil Engineer as assistant to consulting municipal engineer in the South; must be competent to lay out pumping plants, good draftsman; write giving age, experience in detail, salary, references. Address X. F. A., Municipal Journal and Engineer, New York.

POSITION WANTED—Technical education, over 25 years' practical experience on construction as engineer or superintendent of construction railroads, water works, tunnels, aqueducts, canals, dams, power plants, etc.; references. Address X. N. A., Municipal Journal and Engineer, New York.

TEACHER—Instructor in Metallurgy for western school, \$1,200; good opening for instructor in Forestry, \$900 to start; other good openings for technical teachers. Hapgoods, 305 Broadway, New York.

GRAVITY & PRESSURE FILTERS
WATER PURIFICATION FOR ALL PURPOSES
WATER SOFTENING & FILTRATION SYSTEMS.
WM. B. SCAIFE & SONS CO. FOUNDED 1802 **PITTSBURG, PA.**